

THE PARASITES OF AUSTRALIAN BIRDS.

By J. BURTON CLELAND, M.D.

[Read May 11, 1922.]

Apart from the interest centred in themselves zoologically as species and genera of animals, the parasites of birds may claim special attention from ornithologists on several grounds connected with their hosts. It is with the bird aspect that this contribution deals.

The ecto- and endo-parasites of birds may affect their health. In a state of Nature we have little evidence of this as far as our native species are concerned. Attention may be called, however, to the helminth ova found in tumours in the intestine of a black duck.

In certain cases, ornithologists may perhaps gain considerable help from a study of bird parasites in establishing generic affinities in otherwise doubtful cases. With some exceptions, and excluding occasional accidental infections of birds of other genera, both such external parasites as mallophaga and such internal ones as the helminths are probably remarkably specific as regards their hosts: that is, are confined to one species of bird only or to a few closely-allied species. In a broader sense, this may also apply to genera. The reason for this specification is clear. The ancestors of the parasites undoubtedly began their parasitic career as accidental infestations, individuals gaining access to their hosts in some way, being able to resist the efforts of these hosts to dislodge them, and being capable of nourishing and reproducing themselves in their new environment. In the course of time they became structurally more and more modified to fit themselves for the parasitic life. Modifications suitable for one host might be unsuitable for others. Passage would more easily be achieved from one host to another of the same species. During the period in which the parasites were undergoing these marked evolutionary changes, their hosts would also be doing the same. Sometimes the parasites would change structurally more quickly or more markedly than their hosts, and then we would have perhaps two or more closely-allied species of parasite in one specific host or in two or in several closely-related hosts. In other cases the parasites might remain more or less stationary, whilst considerable structural changes might occur in several directions in the descendants of the original host.

We then might have identical or closely-allied parasites in two or more related species or in closely connected genera. A generic or even family relationship might thus be shown, and it is possible that a disputed point might be settled in this way. Thus, supposing a genus X appears to be related either to the genus Y or to the genus Z, if X and Y have closely related parasites and those of Z are distantly connected, then support is found for the relationship with Y rather than Z.

L. Harrison (Parasit., viii., 1915, pp. 88-100), in an article on "Mallophaga from *Apteryx*, and their significance, with a note on the Genus *Rallicola*," deals in an interesting way with the value of these ecto-parasites as showing probable affinities amongst their hosts.

The following extract from Nature (No. 2330, vol. 93, June 25, 1914, p. 439) shows another interesting phase of this subject:—"From a paper by Mr. H. Victor Jones in the February number of the Zoologist on certain parasites of birds, we learn that while rooks and the diurnal birds-of-prey—probably owing to the strength of their gastric juices—are practically free from intestinal infestations of this kind, curlews show, on the average, no fewer than 49·5 per head. As there seems to be a connection in many species between the numbers of external and internal parasites, it is suggested that some of the former may serve as hosts for the latter during the earlier stages of their development."

There is clearly very much work still to be done in the parasitology of Australian birds. I have now collected a considerable number of mallophaga and worms which await description when our few investigators in these subjects have time to consider them. Cestodes have already been described from 44 species of our birds. I record their occurrence in 59 species, of which 50 are new hosts. Cestodes, it will be seen from the attached list, are rare in our wild parrots, have not yet been met with in our cuckoos, are common in the honey-eaters, and occur in several of the Ptilonorhynchidae, as well as in other genera. I have not found any in the Acanthizas (9 species and 30 individuals) or in *Sericornis* (4 species and 15 individuals). Here it may be mentioned that, once helminth parasites are "dropped" by a host-species or host-genus, with rare exceptions it is very unlikely that such species or genus will ever again become infested by such parasites. In other words, these parasites are usually so highly specialized that they can only exceptionally adapt themselves to hosts of a quite different kind, and new true parasites derived from semi-parasites only very rarely arise.

The following summarises the results of previous records and my findings in birds examined:—

Cestodes recorded previously in 45 species. Found by me in 59, of which 50 are new hosts.

Adult nematodes recorded previously in 21 species. Found by me in 22, of which 15 are new hosts.

Microfilariae recorded previously in 34 species.

Acanthocephala recorded previously in 21 species. Found by me in 10, of which 6 are new hosts.

Trematodes recorded previously in 38 species. Found by me in 1.

Fleas recorded previously in 1 species. Found by me in 2, of which 1 is a new host.

Hippoboscidae recorded previously in 3 species. Found by me in 1, which is a new host.

Mallophaga recorded previously in 64 species. Found by me in 65, of which 54 are new hosts.

Ticks recorded previously in 1 species. Found by me in 4, of which 3 are new hosts.

Mites recorded previously in 18 species. Found by me in 22, of which 21 are new hosts.

Haemosporidia recorded previously in 47 species.

Haemoflagellates recorded previously in 12 species.

In 302 individuals, comprising 132 species, no entozoa were detected. Though it is probable that, in some of these, parasites were overlooked (and in some of the species they have been previously recorded), the number of infested birds thus missed is probably small. No ectozoa were detected on 61 individuals belonging to 46 species.

The numbers following the names of the birds are those of the check-list published in the Emu, vol. xii., 1912-3.

Pt. I.—RECORDED PARASITES OF AUSTRALIAN BIRDS.

1. Cestodes.⁽¹⁾

Order CASUARIIFORMES.

Dromaius novae-hollandiae (No. 1).—*Davainea australis*, Krabbe; *Cotugnia collini*, Fuhr.

Casuarius australis (No. 4).—Cestodes in intestine, N.Q., *Macgillivray* (Emu, xvii., 1917, p. 80).

Order COLUMBIFORMES.

Leucosarcia picata (No. 40).—*Davainea* sp., *Instn.*

Order PODICIPEDIFORMES.

Podiceps gularis (No. 57).—*Taenia novae-hollandiae*, Krefft; *Taenia paradoxa*, Krefft.

(1) Unless a full reference is given, the references to the various records will be found in a paper by Dr. T. Harvey Johnston on "Internal Parasites recorded from Australian Birds" (Emu, vol. xii., 1912, p. 105), which forms the basis for this List.

Order PROCELLARIIFORMES.

Diomedea exulans (No. 94).—*Tetrabothrius* sp., *Jnstrn.*
Diomedea melanophrys (No. 95).—*Tetrabothrius* sp., *Jnstrn.*

Order CHARADRIIFORMES.

Lobivanellus lobatus (No. 128).—*Gyrocoelia* sp., *Jnstrn.* (Ann. Trop. Med. and Paras., viii., 1914, p. 108).
Zonifer pectoralis (No. 130).—*Choanotaenia zoniferae*, *Jnstrn.*
Himantopus leucocephalus (No. 142).—*Gryocoelia australiensis*, *Jnstrn.* (*Taenia coronata*, *Krefft*); *Acoleus hedleyi*, *Jnstrn.* (*Taenia rugosa*, *Krefft*); *Davainea himantopodis*, *Jnstrn.*; *Hymenolepis* sp., *Jnstrn.*
Gallinago australis (No. 166).—*Aploparaksis australis*, *Jnstrn.*
Oedicnemus grallarius (No. 171).—*Angularia australis*, *Maplestone* (Ann. Trop. Med. and Parasit., xv., No. 4, 1921).

Order ARDEIFORMES.

Platalea regia (No. 178).—*Cylorchida omalancristrota*, *Wedl.*
Platibis flavipes (No. 179).—*Hymenolepis ibidis*, *Jnstrn.*
Xenorhynchus asiaticus (No. 180).—*Clelandia parva*, *Jnstrn.*
Herodias syrmatophorus (timoriensis) (No. 184).—*Anomotaenia asymmetrica*, *Jnstrn.*; *Bancroftiella glandularis*, *Fuhrm.*
Notophoyx novae-hollandiae (No. 185).—*Bancroftiella glandularis*, *Fuhrm.*
Nycticorax caledonicus (No. 191).—*Bancroftiella ardeae*, *Jnstrn.*; *Hymenolepis* sp., *Jnstrn.*

Order ANSERIFORMES.

Anseranas melanoleuca (No. 199).—*Hymenolepis megalops*, *Nitzsch*; *Hymenolepis terraereginae*, *Jnstrn.*
Dendrocygna arcuata (No. 204).—*Diploposthe laevis*, *Bl.*; *Diorchis flavescentis* (*Krefft*), *Maplestone* (Ann. Trop. Med. and Parasit., xv., No. 4, 1921, p. 403).
Anas superciliosa (No. 208).—*Hymenolepis megalops*, *Nitzsch* (*Taenia cylindrica*, *Krefft*); *H. collaris*, *Batsch*. (*Taenia bairdii*, *Krefft*); *Hymenolepis* sp., *Jnstrn.*; *Diorchis flavescentis*, (*Krefft*); *Fimbriaria fasciolaris*, *Pall.* (*Taenia pediformis*, (*Krefft*)); *Diploposthe laevis*, *Bl.*
Nettium castaneum (No. 209).—*Diorchis flavescentis* (*Krefft*); *Diploposthe laevis*, *Bl.*; *Hymenolepis collaris*, *Bat.*; *Hymenolepis megalops*, *Nitzsch* (*Taenia cylindrica*, *Krefft*); *Fimbriaria fasciolaris*, *Pall.*
Spatula rhynchos (No. 213).—*Diorchis flavescentis* (*Krefft*).
Nyroca australis (No. 216).—*Diploposthe laevis*, *Bloch* (*Taenia tuberculata*, *Krefft*); *Diorchis flavescentis* (*Krefft*).
Biziura lobata (No. 218).—*Taenia moschata*, *Krefft*.

Order PELECANIFORMES.

Tachypetes (*Fregata*) *aquila* (No. 229).—*Tetrabothrius* sp., *Jnstrn.*

Order ACCIPITRIFORMES.

Accipiter torquatus (No. 240).—*Anomotaenia accipitrinis*, *Jnstrn.*

Order PSITTACIFORMES.

Trichoglossus swainsoni (No. 274).—*Moniezia trichoglossi*, *Linstow*.
Cacatua galerita (No. 291).—*Davainea cacatuina*, *Jnstrn.*
Platycercus eximius (No. 311).—*Dilepis bancrofti*, *Jnstrn.*

Order CORACIIFORMES.

Dacelo gigas (No. 345).—*Similuncinus dacelonis*, *Jnstn.*

Order PASSERIFORMES.

Petroica goodenovii (No. 394).—*Hymenolepis* sp., *Jnstn.*

Pachycephala rufiventris (No. 430).—*Sphaeruterina punctata*, *Jnstn.* (Proc. Roy. Soc. Q'land, xxvi., 1914, p. 76).

Malurus cyaneus (No. 530).—*Choanotaenia taylori*, *Jnstn.*

Zosterops dorsalis (No. 599).—*Zosteropicola clelandi*, *Jnstn.*

Conopophila albogularis (No. 634).—*Davainea conopophilae*, *Jnstn.*

Ptilotis chrysotis (No. 644).—*Choanotaenia meliphagidarum*, *Jnstn.*

Ptilotis leucotis (No. 651).—*Choanotaenia meliphagidarum*, *Jnstn.*

Meliornis novae-hollandiae (No. 668).—*Choanotaenia meliphagidarum*, *Jnstn.*

Meliornis sericea (No. 669).—*Choanotaenia meliphagidarum*, *Jnstn.*

Entomyza cyanotis (No. 680).—*Davainea conopophilae*, *Jnstn.*

Philemon citreogularis (No. 685).—*Davainea conopophilae*, *Jnstn.*

Sphecotheres maxillaris (No. 714).—*Davainea sphecotheridis*, *Jnstn.* (Ann. Trop. Med. and Parasit., viii., 1914, p. 106).

Chlamydera maculata (No. 722).—*Choanotaenia chlamyderae*, (*Krefft*).

Ptiloris alberti (No. 730).—*Biuterina clavulus*, *Linst.*

Corvus coronoides (No. 732).—*Davainea* sp., *Jnstn.*

2. Nematodes (omitting Microfilariae).⁽²⁾

Order GALLIFORMES.

Catheturus lathami (No. 7).—*Heterakis bancrofti*, *Jnstn.*; *Heterakis catheturinus*, *Jnstn.*

Order PROCELLARIIFORMES.

Daption capensis (No. 86).—*Rictularia shipleyi*, *Stoss* (probably).

Order ANSERIFORMES.

Chlamydochen jubata (No. 203).—*Heterakis chenonettae*, *Jnstn.*

Order PELECANIFORMES.

Phalacrocorax carbo (No. 219).—*Ascaris* sp., *Jnstn.*

Phalacrocorax sulcirostris (No. 220).—*Ascaris spiculigera*, *Rud.*

Plotus novae-hollandiae (No. 224).—*Ascaris spiculigera*, *Rud.* (*Ascaris* sp., *Krefft*).

Pelecanus conspicillatus (No. 233).—*Ascaris spiculigera*, *Rud.* (?)

Order ACCIPITRIFORMES.

Falco lunulatus (No. 258).—*Filaria* sp., *Jnstn.*

Hieracidia berigora (No. 259).—*Filaria guttata*, *Schneider.*

Order STRIGIFORMES.

Ninox boobook (No. 263).—*Filaria* sp., *Jnstn.*

Ninox ocellata (No. 264).—*Filaria* sp., *Jnstn.*

(2) For references, *vide* footnote to List of Recorded Cestodes of Australian birds.

Order CORACIIFORMES.

Sub-order PODARGI.

Podargus sp.—*Nematodes*, *Bancroft* (Proc. Roy. Soc. Q'land, 1889, p. 60).

Sub-order HALCYONES.

Dacelo leachi (No. 346).—(*Filaria*) *dacelonis*, *Breinl* (Austr. Inst. Trop. Med., Rep. for 1911, p. 42).

Order PASSERIFORMES.

Fam. CAMPOPHAGIDAE.

Graucalus melanops (No. 457).—*Filaria* sp., *Instn.*

Fam. MELIPHAGIDAE.

Myzantha garrula (No. 672).—*Filaria* sp., *Bancroft*.

Anthochaera carunculata (No. 675).—*Oxyspirura anthochaerae*, *Instn.* (Proc. Roy. Soc. Q'land, xxiv., 1912, p. 80) (*Ceratospira anthochaerae*, *Instn.*; *Ascaris* sp., *Krefft*).

Annellobia mellivora (No. 677) (recorded as *A. lunulata*).—*Filaria* sp., *Bancroft*.

Acanthogenys rufigularis (No. 679).—*Filaria* sp., *Instn.*

Philemon citreogularis (No. 685).—*Filaria* sp., *Instn.*

Fam. CORVIDAE.

Corvus australis (No. 734).—*Filaria* sp., *Bancroft*.

Fam. STREPERIDAE.

Cracticus destructor (No. 745).—*Filaria* sp., *Bancroft*.

Gymnorhina tibicen (No. 747).—*Filaria clelandi*, *Instn.*

2a. Microfilariae.⁽³⁾

Microfilariae have been described or merely recorded from the following species of Australian birds:—

Order PELECANIFORMES.

Phalacrocorax sulcirostris (No. 220); *P. melanoleucus* (No. 223); *Plotus novae-hollandiae* (No. 224).

Order ACCIPITRIFORMES.

Accipiter torquatus (No. 240).

Order PSITTACIFORMES.

Trichoglossus swainsoni (No. 274), *Bancroft* (Proc. Roy. Soc. Q'land, vi., 1889 [1890]); *Glossopsitta pusilla* (No. 280).

Order CORACIIFORMES.

Podargus strigoides (No. 337); *Eurystomus pacificus* (No. 341).

Order PASSERIFORMES.

Fam. PITTIIDAE.

Pitta strepitans (No. 377), *Breinl* (Austr. Inst. Trop. Med., Rep. for 1911, p. 43).

(3) For references, *vide* footnote to List of Recorded Cestodes of Australian Birds.

Fam. MUSCICAPIDAE.

Myiagra plumbea (No. 444).

Fam. TIMELIIDAE.

Psophodes crepitans (No. 476); *Pomatorhinus temporalis* (No. 478)
(*Pomatostomus frivolus*).

Fam. TURDIDAE.

Oreocincla lunulata (No. 488).

Fam. ARTAMIDAE.

Artamus leucogaster (No. 559); *A. sordidus* (No. 564) (*Artamus tenebrosus*).

Fam. PRIONOPIDAE.

Colluricincla harmonica (No. 566), *Cleland* (these Trans., xxxix., 1915, p. 33).

Fam. (?)

Struthidea cinerea (No. 576); *Corcorax melanorhampus* (No. 577).

Fam. DICAEIDAE.

Pardalotus melanocephalus (No. 609), *Cleland* and *Jnstn.* (Jour. Proc. Roy. Soc. N.S. Wales, xlv., 1911, p. 433).

Fam. MELIPHAGIDAE.

Plectrorhyncha lanceolata (No. 621); *Myzomela sanguineolenta* (No. 622); *Stigmatops ocularis* (No. 639); *Ptilotis fusca* (No. 643); *Myzantha garrula* (No. 672); *Anellobia mellivora* (lunulata of *Bancroft's* record) (No. 677); *Entomyza cyanotis* (No. 680); *Philemon citreogularis* (No. 685).

Fam. ORIOLIDAE.

Oriolus viridis (No. 712).

Fam. DICRURIDAE.

Chibia bracteata (No. 716).

Fam. PTILONORHYNCIDAE.

Sericulus chrysocephalus (No. 726).

Fam. CORVIDAE.

Corvus coronoides, *Corvus australis* (Nos. 732, 734).

Fam. STREPERIDAE.

Strepera graculina (No. 735), *Bancroft* (Proc. Roy. Soc. Q'land, vi., 1889 [1890]); *Cracticus nigrogularis* (No. 741); *C. destructor* (No. 745).

Gymnorhina tibicen (No. 747).—*Microfilaria gymnorhinae*, *Gilruth*, *Sweet*, and *Dodd*.

3. Acanthocephala.⁽⁴⁾

Order GALLIFORMES.

Catheturus lathami (No. 7).—*Echinorhynchus* sp., *Jnstn.*

Order CHARADRIIFORMES.

Numenius cyanopus (No. 145).—*Echinorhynchus* sp., *Jnstn.*

⁽⁴⁾ For references, vide footnote to List of Recorded Cestodes of Australian Birds.

Order ACCIPITRIFORMES.

- Astur cinereus* (No. 236).—*Centrorhynchus asturinus*, *Jnstn.*
 (Proc. Roy. Soc. Q'land, xxx., 1918, p. 216).
Astur novae-hollandiae (No. 237).—*Centrorhynchus asturinus*,
Jnstn. (*loc. cit.*).
Astur approximans (No. 238) (*A. fasciatus*).—*Echinorhynchus* sp.,
Jnstn.
Baza supercristata (No. 254).—*C. asturinus*, *Jnstn.* (*loc. cit.*).

Order STRIGIFORMES.

- Ninox boobook* (No. 263).—*Echinorhynchus*=*Centrorhynchus* sp.,
Jnstn.

Order CORACIIFORMES.

- Podargus strigoides* (No. 337).—*E.* sp., *Jnstn.*
Halcyon sanctus (No. 349).—*E.* sp., *Jnstn.*

Order MENURIFORMES.

- Menura superba* (No. 374).—*E. menurae*, *Jnstn.*

Order PASSERIFORMES.

Fam. MUSCICAPIDAE.

- Pachycephala gilberti* (No. 432).—*Echinorhynchus pomatostomi*,
Jnstn. and *Clel.* (larvae, subcutaneous).

Fam. TIMELIIDAE.

- Hylacola pyrrhopygia* (No. 474).—*E. pomatostomi*, *Jnstn.* and
Clel. (larvae, subcutaneous).
Psophodes crepitans (No. 476).—*E.* sp., *Jnstn.*
Pomatorhinus temporalis (No. 478).—*E. pomatostomi*, as above.
Pomatorhinus superciliosus (No. 479).—*E. pomatostomi*, as above.
Pomatorhinus rubeculus (No. 481).—*E. pomatostomi*, as above.

Fam. TURDIDAE.

- Oreocincla lunulata* (No. 488).—*Echinorhynchus* sp., *Jnstn.*

Fam. PRIONOPIDAE.

- Grallina picata* (No. 575).—*E.* sp., *Jnstn.*

Fam. PARIDAE.

- Aphelocephala leucopsis* (No. 578).—*E. pomatostomi*, as above.

Fam. CERTHIIDAE.

- Climacteris melanura* (No. 589) (*C. wellsi*).—*E. pomatostomi*, as
 above.

Fam. MELIPHAGIDAE.

- Meliornis novae-hollandiae* (No. 668).—*E.* sp., *Jnstn.*

4. Trematodes.⁽⁵⁾

Order COLUMBIFORMES.

- Leucosarcia picata* (No. 40).—*Harmostomum pulchellum*, *S. J. Johnston* (N.S. Wales).

(5) Compiled from S. J. Johnston's article "On the Trematodes of Australian Birds" in Jour. Proc. Roy. Soc. of N.S. Wales, l., 1916, p. 187.

Order RALLIFORMES.

Porphyrio melanotus (No. 55).—*Echinostomum hilliferum*, *Nicoll.*

Order LARIFORMES.

Sterna cristata (No. 107) (*S. bergii*).—*Lyperosomum megastomum*, *S. J. Johnston* (N.S. Wales); *Holostomum musculosum*, *S. J. Johnston* (N.S. Wales).

Larus novae-hollandiae (No. 119).—*Austrobilharzia terrigalensis*, *S. J. Johnston* (N.S. Wales); *Holostomum hillii*, *S. J. Johnston* (N.S. Wales).

Order CHARADRIIFORMES.

Lobivanellus lobatus (No. 128).—*Haematotrepus consimilis*, *Nicoll*; *Echinostomum ignavum*, *Nicoll*.

Charadrius fulvus (No. 132) (*C. dominicus*).—*Acanthoparyphium spinulosum*, *S. J. Johnston* (N.S. Wales); *Levinseiniella howensis*, *S. J. Johnston* (Lord Howe Island).

Himantopus leucocephalus (No. 142).—*Haematotrepus adelphus*, *S. J. Johnston* (S. Austr.).

Numenius cyanopus (No. 145).—*Himasthla harrisoni*, *S. J. Johnston* (Q'land).

Limosa novae-hollandiae.—*Cyclocoelum taxorchis*, *S. J. Johnston* (Lord Howe Island).

Ædicinemus grallarius (No. 171) (*Burhinus grallarius*).—*Platynotrema biliosum*, *Nicoll*; *P. jecoris*, *Nicoll*.

Order GRUIFORMES.

Antigone australasiana (No. 174).—*Allopyge antigones*, *S. J. Johnston*; *Echinostomum australasianum*, *Nicoll*.

Order ARDEIFORMES.

Ibis molucca (No. 175).—*Patagifer acuminatus*, *S. J. Johnston* (Q'land).

Carpibis spinicollis (No. 176).—*Echinostoma acuticauda*, *Nicoll* (Q'land).

Platalea regia (No. 178).—*Orchipedum sufflavum*, *Nicoll*; *Patagifer bilobus*, *Rud.*

Plegadis falcinellus (No. 177).—*Patagifer bilobus*, *Rud.*

Xenorhynchus asiaticus (No. 180).—*Chaunocephalus ferox*, *Rud.*

Herodrius (*Syrmatophorus*) *timoriensis* (No. 184).—*Patagifer fraternus*, *S. J. Johnston* (Q'land); *Echinoparyphium oxyurum*, *S. J. Johnston* (Q'land).

Notophoyx novae-hollandiae (No. 185) (*Ardea novae-hollandiae*).—*Holostomum simplex*, *S. J. Johnston*; *H. repens*, *Chase* (Proc. Linn. Soc. N.S. Wales, xlv., 1921, p. 500) (N.S. Wales).

Nycticorax caledonicus (No. 191).—*Clinostomum hornum*, *Nicoll*.

Order ANSERIFORMES.

Chenopis atrata (No. 198).—*Hemistomum intermedium*, *S. J. Johnston*; *Hyptiasmus magnus*, *S. J. Johnston* (Vict.); *Notocotylus attenuatus*, *Rud.*

Anseranas melanoleuca (No. 199) (*A. semipalmata*).—*Typhlocoelum reticulare*, *S. J. Johnston*.

Nettapus pulchellus (No. 200).—*Notocotylus attenuatus*, *Rud.*

Anas superciliosa (No. 208).—*Echinostomum revolutum*, *Froel.*; *Notocotylus attenuatus*, *Rud.*

Order PELECANIFORMES.

- Phalacrocorax melanoleucus* (No. 223).—*Dolichosaccus solecarius*, *S. J. Johnston* (N.S. Wales); *Echinochasmus tenuicollis*, *S. J. Johnston* (N.S. Wales).
Plotus novae-hollandiae (No. 224).—*Clinostomum australiense*, *S. J. Johnston* (Q'land).

Order ACCIPITRIFORMES.

- Haliaetus leucogaster* (No. 246).—*Scaphanocephalus australis*, *S. J. Johnston*.
Hieracidea berigora (No. 259).—*Opisthorchis obsequens*, *Nicoll* (Q'land).
H. orientalis (No. 260).—*Echinochasmus prothovitellatus*, *Nicoll* (Q'land).

Order STRIGIFORMES.

- Ninox boobook* (No. 263).—*Lyperosomum harrisoni*, *S. J. Johnston* (N.S. Wales); *Strigea promiscua*, *Nicoll* (Q'land).
N. maculata (No. 265).—*Strigea promiscua*, *Nicoll* (Q'land); *Hemistomum brachyurum*, *Nicoll* (Q'land); *H. triangulare*, *S. J. Johnston* (N.S. Wales).

Order CORACIIFORMES.

- Podargus strigoides* (No. 337).—*Echinostomum elongatum*, *Nicoll*.
Dacelo gigas (No. 345).—*Hemistomum triangulare*, *S. J. Johnston* (N.S. Wales); *Strigea flosculus*, *Nicoll*.

Order COCCYGES.

- Centropus phasianus* (No. 373).—*Echinostomum emollitum*, *Nicoll*.

Order PASSERIFORMES.

- Petrochelidon ariel* (No. 387).—*Plagiorchis clelandi*, *S. J. Johnston* (N.S. Wales).
Microeca fascinans (No. 388).—*Echinoparyphium harveyanum*, *S. J. Johnston* (Q'land).
Anthus australis (No. 687).—*Plagiorchis spatulatus*, *S. J. Johnston* (Q'land).
Chibia bracteata (No. 716).—*Plagiorchis* (*Lepoderma*) *nisbettii*, *Nicoll*; *Prosthognomus vitellatus*, *Nicoll*.
Strepera arguta (No. 736) (*S. versicolor*).—*Lyperosomum parvum*, *S. J. Johnston* (N.S. Wales).

5. Siphonaptera (Fleas).

Order SPHENISCIFORMES.

- Eudyptula minor* (No. 62).—*Parapsyllus australiacus*, *Roths.* (Nov. Zool., xvi., 1909, p. 62) (*P. longicornis*, *Jord.* and *Roths.* [*nec. Enderl.*, *err. determ.*]).

6. Diptera.

Order ACCIPITRIFORMES.

- White Hawk.—*Ornithoctona nigricans*, *Leach* (S. Q'land) (*vide* W. W. Froggatt in "Australian Insects").

Order STRIGIFORMES.

- Ninox boobook* (No. 263).—*Ornithomyia perfuga*, *Spajer*, on an owl, probably this species, near Brisbane (*vide* Froggatt, *loc. cit.*).

Order MENURIFORMES.

Menura superba (No. 374).—Larvae of a Muscid fly subcutaneously (*Gilbert*, *Emu*, xix., 1919, p. 48).

Order PASSERIFORMES.

Stipiturus malachurus (No. 545).—*Ornithomyia stipituri*, *Schiner* (Zool. Voy. Novara, 1850) (*vide Froggatt, loc. cit.*).

Glyciphila fulvifrons (No. 629).—Larvae of a Muscid fly subcutaneously (*Gilbert, loc. cit.*, p. 49).

Meliornis novae-hollandiae (No. 668).—Larvae of a Muscid fly subcutaneously (*Gilbert, loc. cit.*, p. 49).

Meliornis sericea (No. 669).—Larvae of a Muscid fly subcutaneously (*Gilbert, loc. cit.*, p. 48).

Anthus australis (No. 687).—Fly larvae attached to body (*Harvey, Emu*, xix., 1919, p. 40; Q'land).

Mr. Froggatt also states that Hippoboscid flies occur on our fruit-pigeons, swallows, and fly-catchers.

7. Mallophaga.⁽⁶⁾

Order CASUARIIFORMES.

Dromaius novae-hollandiae (No. 1).—*Degeeriella asymmetrica* (*Nitzsch*) (syn. *Nirmus setosus*; *Le Souëf* and *Bullen*) (Q'land, N.S. Wales, Vict.).

Order GALLIFORMES.

Catheturus lathami (No. 7).—*Goniocotes fissus*, *Rud.* (from *Tale-gallus lathami*); *G. macrocephalus*, *Taschenb.* (from *T. lathami*); *Lipeurus ischnocephalus*, *Taschenb.* (from *T. lathami*); *L. crassus*, *Rud.*

Synoicus australis (No. 9).—*Goniodes elongatus*, *Piaget* (Vict.); *G. retractus*, *Le Souëf* (Vict.).

Excalfactoria australis (No. 10).—*Lipeurus acuminatus*, *Piaget*; *Goniodes elongatus*, *Piaget* (syn. *G. longus*, *Le Souëf*); *Menopon pallipes*, *Piaget*.

Order COLUMBIFORMES.

Megaloprepia magnifica (No. 21).—*Esthiopterum columbae* (L.) (syn. *Lipeurus baculus*, *Nitzsch*, and *N. angustus*, *Rud.*) (from *Carpophaga magnifica*).

Macropygia phasianella (No. 25).—*Colpocephalum albidum*, *Giebel* (from *Columba phasianella*).

Phaps chalcoptera (No. 30).—*Goniocotes flavus* (*Rud.*); *Esthiopterum columbae* (L.) (*Tas.*); *Colpocephalum albidum*, *Giebel*.

Leucosarcia pictata (No. 40).—*Esthiopterum columbae* (L.) (from *Leucosarca plicata*).

(6) These records are compiled almost entirely from Prof. V. L. Kellogg's article "Mallophaga" in Wytman's "Genera Insectorum," 1908, from Johnston and Harrison's "Census of Australian Mallophaga" in Proc. Roy. Soc. Q'land, xxiv., 1912, and particularly from Harrison's "Census of Mallophaga in Parasitology," ix., 1916, pp. 1-152. Full references are only given for species not included in these lists. In many cases, though the host occurs in Australia, the parasite has not actually as yet been recorded for this country. Australian occurrences are indicated.

Order RALLIFORMES.

- Rallina tricolor* (No. 44).—*Rallicola bisetosa* (*Piaget*) (syn. *Oncophorus bisetosus*, *Piaget*).
Tribonyx ventralis (No. 52).—*Goniodes cornutus*, *Rud.* (straggler; L. H.); *Philopterus flavopunctatus*, *Rud.*
Porphyrio melanotus (No. 55).—*Rallicola* (*Oncophorus*) *fallax* (*Piaget*) (from *Porphyrio melanotus*, Australia).

Order SPHENISCIFORMES.

- Eudyptula minor* (No. 62).—*Austrogoniodes waterstoni*, *Cummings* (Bull. Ent. Rev., v., 1914, p. 173, f. 8).

Order PROCELLARIIFORMES.

- Ossifraga gigantea* (No. 85).—*Esthiopterum obscurum* (*Rud.*) (syn. *Lipeurus melanocnemis* *Giebel*) (from *Procellaria gigantea*).
Daption capense (No. 86).—*Esthiopterum* (*Lipeurus*) *gurlii* (*Taschenb.*) (from *Procellaria capensis*); *E. nigrolimbatum* (*Giebel*) (syn. *E. mutabile*, *Piaget*); *E. fuliginosum*, *Taschenb.* (syn. *E. testaceum*, *Taschenb.*); *Ancistroma vagelli*, *Fabr.* (syn. *A. procellariae*, *Westwood*), N.S. Wales.
Diomedea exulans (No. 94).—*Docophoroides brevis*, *Dufour* (syns. *D. dentatus*, *Giebel*, and *D. taurus*, *Nitzsch*); *Esthiopterum pederiforme*, *Dufour* (syns. *Docophorus thoracicus*, *Nitzsch*; *Nirmus angulicollis*, *Giebel*; and *L. breviceps*, *Piaget*); *E. hyalineum* (*Neum.*); *E. fuliginosum*, *Taschenb.* (syn. *Lipeurus fuliginosus*, *Taschenb.*); *Menopon affine*, *Piaget*.
Diomedea chlororhynchos (No. 98).—*Esthiopterum* (*Lipeurus*) *fuliginosus*, *Taschenb.*

Order LARIFORMES.

- Sterna cristata* (No. 107).—*Colpocephalum crassipes*, *Piaget* (from *S. poliocera*=*S. bergii*=this species).

Order CHARADRIIFORMES.

- Tringa canutus* (No. 164).—*Degeeriella* (*Nirmus*) *holopaea* (*Nitzsch*).
Parra gallinacea (No. 168).—*Parricola sulcata*, *Piaget* (syn. *Oncophorus sulcatus*, *Piaget*).

Order GRUIFORMES.

- Antigone australasiana* (No. 174).—*Philopterus integer*, *Nitzsch* (syn. *Docophorus integer*, *Nitzsch*); *Philopterus novae-hollandiae*, *Giebel* (syn. *D. novae-hollandiae*, *Giebel*); *Esthiopterum* (*Lipeurus*) *giganteum* (*Le Souëf* and *Bullen*) Q'land, N.S. Wales, Vict.); *E. (Lipeurus) gruis* (*L.*) (syn. *L. hebraeus*, *Nitzsch*) (Q'land, N.S. Wales, Vict.).

Order ARDEIFORMES.

- Ibis molucca* (No. 175).—*Esthiopterum ibidis*, *Harris.* (syn. *Lipeurus ibis*, *Le Souëf* and *Bullen*, from *Threskiornis strictipennis*, Australia).
Platibis flavipes (No. 179).—*Ornithobius fuscus*, *Le Souëf* (? a straggler).
Xenorhynchus asiaticus (No. 180).—*Philopterus horridus*, *Giebel* (from *Ciconia australis*).

- Ardea cinerea* (No. 182).—*Colpocephalum decimfasciatum*, *Bois.* and *Lacord.* (syn. *C. importunum*, *Nitzsch*); *Esthiopterum ardeae* (L.) (syn. *Lipeurus leucopygus*, *Nitzsch*).
Notophoyx novae-hollandiae (No. 185).—*Philopterus longipes*, *Rud.*; *Esthiopterum* (*Lipeurus*) *unguiculatum* (*Piaget*) (from *Herodias novae-hollandiae*).

Order ANSERIFORMES.

- Chenopis atrata* (No. 198).—*Esthiopterum megacerus*, *Jnstn.* and *Harris.* (syns. *Lipeurus anatis megaceros*, *Jnstn.* and *Harris.*, and *L. squalidus*, *Nitzsch*, var. *attenuata*, *Piaget*); *Ornithobius fuscus*, *Le Souëf* (Vict.); *Trinoton nigrum*, *Le Souëf* (Vict.); *Colpocephalum castaneum*, *Piaget* (from *Cygnus atratus*).
Anseranas melanoleuca (No. 199).—*Heteroproctus hilli*, *Harrison* (Parasit., vii., 1914-5, p. 394) (Northern Territory).
Cereopsis novae-hollandiae (No. 202).—*Esthiopterum australe* (*Rud.*) (syn. *Lipeurus australis*, *Rud.*) (from *Coreopsis novae-hollandiae*).
Nettium gibberifrons (No. 210).—*Esthiopterum crassicornis* (*Scopoli*) (syns. *Lipeurus anatis major*, *Piaget*, and *L. squalidus*, *Nitzsch*, var. *major*, *Piaget* (from *Anas gibberifrons*).
Nyroca australis (No. 216).—*Esthiopterum crassicornis* (*Scopoli*) (syn. *E. nyrocae* [*Rud.*]).

Order PELECANIFORMES.

- Phalacrocorax carbo* (No. 219).—*Degeeriella* (*Nirmus*) *interrupta*, *Piaget*; *Esthiopterum mergiserrati*, *Degeer* (syn. *Lipeurus temporalis*, *Nitzsch*); *E. longicorne* (*Piaget*); *E. toxocerum* (*Nitzsch*); *Menopon brevipalpe*, *Piaget*.
Phalacrocorax sulcirostis (No. 220).—*Esthiopterum* (*Lipeurus*) *setosum* (*Piaget*); *E. confuscum*, *Bag.* and *Hall* (syn. *E. brevicorne*, *Piaget*); *E. acutifrons* (*Rud.*) (syn. *E. dispar*, *Piaget*); *Menopon subrotundum*, *Piaget*.
Sula australis (No. 225).—*Philopterus* (*Docophorus*) *breviantennatus* (*Piaget*); *Eschipterum* (*Pectinopygus*, *Lipeurus*) *gyricornis* (*Denny*); *Menopon albescens*, *Piaget*.

Order ACCIPITRIFORMES.

- Haliaetus leucogaster* (No. 246).—*Colpocephalum flavescens*, *Nitzsch*.

Order PSITTACIFORMES.

- Trichoglossus swainsoni* (No. 274) (*T. novae-hollandiae*).—*Eomenopon denticulatum*, *Harrison* (Parasit., vii., 1914-5, p. 385) (N.S. Wales); *Psittaconirmus australis*, *Harrison* (*loc. cit.*, p. 403) (N.S. Wales).
Ptilosclera versicolor (No. 277).—*Eomenopon denticulatum*, *Harrison* (*loc. cit.*) (N.S. Wales).
Glossopsitta porphyrocephala (No. 279).—*Psittaconirmus australis*, *Harrison* (*loc. cit.*) (W. Austr.).
Microglossus aterrimus (No. 283).—*Menopon commissum*, *Neum.*; *Degeeriella* (*Nirmus*) *paraboliceps* (*Piaget*) (from *Psittacus aterrimus*); *Colpocephalum temporale*, *Piaget* (from *Macroglossus aterrimus*).
Calyptorhynchus leachi (No. 289).—*Esthiopterum* (*Lipeurus*) *circumfasciatum* (*Piaget*) (from *Calyptorhynchus leachi*).

- Cacatua galerita* (No. 291).—*Esthiopterum capreolum*, *Gervais* (syn. *Lipeurus albus*, *Le Souëf* and *Bullen*) (Australia).
- Cacatua roseicapilla* (No. 295).—*Degeeriella eos* (*Rud.*) (syns. *Nirmus eos*, *Rud.*, and *N. tenuis*, *Rud.*) (from *Plictolophus (Psittacus) roseocapillus* and *Cacatua (Psittacus) eos*).
- Calopsitta novae-hollandiae* (No. 298).—*Paragoniocotes fasciatus*, *Piaget* (from *Nymphicus novae-hollandiae*).
- Polytelis barbabandi* (No. 299).—*Philopterus (Docophorus) angustoclypeatus* (*Piaget*) (from *Platycercus barbabandi*); *P. (D.) forficula* (*Piaget*) (from *Platycercus barbabandi*); *Colpocephalum trimaculatum*, *Piaget* (from *Platycercus barbabandi*).
- Polytelis melanura* (No. 300).—*Esthiopterum (Lipeurus) circumfasciatum* (*Piaget*) (from *Platycercus melanura*).
- Aprosmictus scapulatus* (No. 303).—*Philopterus forficula* (*Piaget*) (syn. *Docophorus forficula*, *Piaget*) (from *Platycercus scapulatus*).
- Platycercus pennanti* (No. 304).—*Philopterus (Docophorus) forficula* (*Piaget*).
- Platycercus pallidiceps* (No. 308).—*Colpocephalum trimaculatum*, *Piaget* (from *Platycercus palliceps*).
- Platycercus eximius* (No. 311).—*Philopterus (Docophorus) forficula* (*Piaget*); *Menopon pteropsittacus*, *Harris*. (syn. *M. psittacus*, *Le Souëf* and *Bullen*) (Australia).
- Barnardius barnardi* (No. 315).—*Philopterus forficula* (*Piaget*) (from *Platycercus baueri* and *P. zonarius*).
- Pezoporus formosus* (No. 334) (*P. terrestris*).—*Degeeriella divergens*, *Neum.*

Order CORACIIFORMES.

- Dacelo gigas* (No. 345).—*Philopterus (Docophorus) delphax* (*Nitzsch*) (from *Dacelo gigantea*); *Degeeriella (Nirmus) bracteata* (*Nitzsch*) (from *Dacelo gigantea*); *D. (Nirmus) goniocotes* (*Piaget*) (Madagascar); *Menopon infumatum*, *Piaget* (Madagascar).

Order COCCYGES.

- Cacomantis flabelliformis* (No. 362).—*Philopterus (Docophorus) laticlypeatus* (*Piaget*) (from *Cuculus flabelliformis*, New Holland).
- Scythrops novae-hollandiae* (No. 372).—*Philopterus acutus*, *Rud.*; *P. (Docophorus) obcordatus* (*Piaget*); *Degeeriella lipeuriformis* (*Rud.*) (syns. *Nirmus lipeuriformis*, *Rud.*; *N. chelurus*, *Nitzsch*); *Myrsidea (Menopon) platygaster* (*Giebel*).

Order MENURIFORMES.

- Menura superba* (No. 374).—*Degeeriella menuraelyrae* (*Coinde*) (syns. *Philopterus (Docophorus) paraboliceps* (*Piaget*); *Nirmus submarginellus*, *Nitzsch*; *N. submarginalis*, *Burm.*; and *N. menura*, *Le Souëf* and *Bullen*).
- Johnston and Harrison consider Kellogg's record of *Degeeriella (Nirmus) marginalis*, *Nitzsch*, as an error.
- Menura victoriae* (No. 375).—*Esthiopterum menura*, *Le Souëf* and *Bullen* (syn. *Lipeurus menura*, *Le Souëf* and *Bullen*) (Vict.); *Menopon menura*, *Le Souëf* and *Bullen* (Vict.); *Degeeriella menuraelyrae* (*Coinde*) (syns. see above) (Vict.).

Order PASSERIFORMES.

Fam. DICAEIDAE.

Pardalotus punctatus (No. 606).—*Menopon* sp., *Giebel*.

Fam. MELIPHAGIDAE.

Glyciphila fasciata (No. 631).—*Goniocotes candidus*, var. *pellucidus*, *Piaget* (probably a straggler; J. and H.).

Tropidorhynchus corniculatus (No. 684).—*Eomenopon denticulatus*, *Harrison* (*Parasitol.*, vii., 1914-5, p. 385) (N.S. Wales; straggler on this host).

Fam. PLOCEIDAE.

Poephila gouldiae (No. 709) (*P. mirabilis*).—*Machaerilaemus latifrons*, *Harrison* (*Parasitol.*, vii., 1914-5, p. 390).

Fam. PTILONORHYNCHIDAE.

Ptilonorhynchus holosericeus (No. 718).—*Menopon ptilonorhynchi*, *Ponton*; *Philopterus ptilonorhynchi*, *Ponton* (syn. *Docophorus grandiceps* (*Nitzsch*) (from *Ptilonorhynchus holosericeus*); *Degeeriella pontoni*, *Instn.* and *Harrison* (syn. *Nirmus nitzschi*, *Ponton*) (from *Ptilonorhynchus holosericeus*).

Sericulus chrysocephalus (No. 726).—*Degeeriella* (*Nirmus*) *hectica* (*Nitzsch*).

Fam. CORVIDAE.

Strepera graculina (No. 735).—*Colpocephalum vinculum*, *Le Souëf* and *Bullen* (Australia).

Gymnorhina tibicen (No. 747).—*Degeeriella bimaculata* (*Piaget*) (syn. *Nirmus bimaculatus*, from *Baryta tibicen*).

Gymnorhina leuconota (No. 750).—*Degeeriella semiannulata* (*Piaget*), (syn. *Nirmus semiannulatus*, *Piaget*, from *Baryta leuconota*); *Degeeriella* (*Nirmus*) *varia*, *Nitzsch* (probably a stray, Rotterdam).

8. ACARINA.

(a) Super-family IXODOIDEA.

Host probably birds (marine).—*Ixodes tasmani*, *Neum.* Collected by Verreaux, the ornithologist (1847) in Tasmania (*vide Nutt.* and *Warb.*, Ticks, pt. ii., 1911, p. 245).

Host marine birds.—*Ixodes putus* (*Pickh.-Cambridge*). Recorded by Neumann from King Island (Tas. ?) (*vide Nutt.* and *Warb.*, Ticks, pt. ii., 1911, p. 261).

Order PASSERIFORMES.

Fam. HIRUNDINIDAE.

Petrochelidon ariel (No. 387) (*Lagenoplastes ariel*).—*Argas lagenoplastes*, *Frogg.* (*Proc. Linn. Soc. N.S. Wales*, 1906, p. 408). Recorded for Merriwa and Narromine, N.S. Wales, and for Q'land.

(b) Super-family ORIBATOIDEA.

Fam. ANALGESIDAE ("Bird Mites").

[For the following records, I am indebted to Mr. W. J. Rainbow's "A Synopsis of Australian Acarina" (*Rec. of Austr. Mus.*, vol. vi., pt. 3, p. 181), where the full references will be found.]

Order CHARADRIIFORMES.

Lobivanellus lobatus (No. 128).—*Trouessartia caudacuta*, *Trouves*.

Order ARDEIFORMES.

Ibis molucca (No. 175).—*Freyana* (*Eufreyana*) *tarandus*, *Troues et Neum.*; *Alloptes corymbophorus*, *Troues et Neum.*

Order ACCIPITRIFORMES.

Haliastur leucosternus (No. 247) (*H. indicus*, var. *girrenera*).—*Pterolichus* (*Eupterolichus*) *phylloproctus*, var. *minor*. *Mégn. et Troues*; *P. (Pseudalloptes) aquilinus*, var. *milvulina*, *Troues*.

Order PSITTACIFORMES.

Trichoglossus swainsoni (No. 274) (*T. novae-hollandiae*).—*Pterolichus* (*Protolichus*) *brachiatus*, var. *crassior*, *Troues*.

Glossopsitta concinna (No. 278).—*Pterolichus* (*Protolichus*) *brachiatus*, var. *crassior*, *Troues*; *P. (Protolichus) falciger*, *Troues*; *P. (Pseudalloptes) cultriventris*, *Troues*.

Microglossus aterrimus (No. 283).—*Pterolichus* (*Protolichus*) *favettei*, *Troues*.

Calyptorhynchus macrorhynchus (No. 287).—*Pterolichus* (*Pseudalloptes*) *spathuliger*, *Troues*.

Platycercus pennanti (No. 304).—*Pterolichus* (*Protolichus*) *chiragricus*, *Mégn. et Troues*; *Protalges cartus*, *Troues*.

Platycercus flaveolus (No. 306).—*Pterolichus* (*Protolichus*) *chiragricus*, *Mégn. et Troues*; *P. (Protolichus) veliger*, *Mégn. et Troues*.

Psephotus xanthorrhous (No. 319A).—*Pterolichus* (*Protolichus*) *favettei*, *Troues*.

Psephotus haematonotus (No. 324).—*Analges tetracentrus*, *Troues*.

Melopsittacus undulatus (No. 333).—*Pterolichus* (*Protolichus*) *lunula*, *Robin*.

Pezoporus formosus (No. 334) (*P. terrestris*).—*Pterolichus* (*Protolichus*) *chiragricus*, *Mégn. et Troues*.

Order MENURIFORMES.

Menura superba (No. 374).—*Alloptes major*, *Troues*.

Order PASSERIFORMES.

Fam. DICAEIDAE.

Dicaeum hirundinaecum (No. 602).—*Alloptes securiger*, *Troues*.

Fam. MELIPHAGIDAE.

Glycyphila fasciata (No. 631).—*Protalges australis*, *Troues*; *Pterodectes manicatus*, *Troues*.

Meliornis sericea (No. 669).—*Alloptes lobulatus*, *Troues*.

Fam. PTILONORHYNCHIDAE.

Sericulus chrysocephalus (No. 726) (*S. melinus*).—*Pterodectes paradisiacus*, *Troues*.

9. Haematozoa⁽⁷⁾

(a) HAEMOSPORIDIA.

Order GALLIFORMES.

Catheturus lathami (No. 7).—*Halteridium* sp.

(7) For references, *vide* footnote to List of Recorded Cestodes of Australian Birds.

Order COLUMBIFORMES.

Lamprotoreron superba (No. 20).—*Haemoproteus* (*Halteridium*) *columbae* (No. 20), *Celli et Fel.*, *Breinl* (Austr. Inst. Trop. Med., Rep. for 1911, p. 38).

Order ARDEIFORMES.

Notophoyx novae-hollandiae (No. 185).—*Haemoproteus* (*Halteridium danilewskyi*, *Grassi et Fel.*, *Breinl* (Austr. Inst. Trop. Med., Rep. for 1911, p. 38).

Order ANSERIFORMES.

Chenopis atrata (No. 198).—*Proteosoma biziurae*, *Gilr.*, *Sweet et Dodd*, ? *Clel.* (Trans. Roy. Soc. S. Austr., xxxix., 1915, p. 27).
Nettium castaneum (No. 209).—*Halteridium* sp.
Biziura lobata (No. 218).—*Proteosoma biziurae*.

Order ACCIPITRIFORMES.

Haliastur leucosternus (No. 247) (*H. girrenera*).—*Haemoproteus* (*Halteridium*) *danilewskyi*, *Grassi et Fel.*, *Breinl* (Austr. Inst. Trop. Med., Rep. for 1911, p. 38).

Falco hypoleucus (No. 256).—*Plasmodium* (*Proteosoma*) *praecox*, *Grassi et Fel.*, *Breinl* (Austr. Inst. Trop. Med., Rep. for 1911, p. 34).

Order STRIGIFORMES.

Ninox boobook (No. 263).—*Halteridium* sp.; *Haemoproteus* (*Halteridium*) *noctuae*, *Celli et Fel.*, *Breinl* (Austr. Inst. Trop. Med., Rep. for 1911, p. 37).

Ninox strenua (No. 268).—*Halteridium* sp., *Clel.* (Trans. Roy. Soc. S. Austr., xxxix., 1915, p. 29).

Order PSITTACIFORMES.

Platycercus adelaide (No. 305).—*Halteridium* sp.

Order CORACIIFORMES.

Sub-order PODARGI.

Podargus strigoides (No. 337).—*Leucocytozoon* sp., *Clel.* (Trans. Roy. Soc. S. Austr., xxxix., 1915, p. 30).

Sub-order HALCYONES.

Dacelo gigas (No. 345).—*Halteridium* sp.

Sub-order MEROPES.

Merops ornatus (No. 352).—*Halteridium* sp.

Order COCCYGES.

Eudynamis cyanocephala (No. 371).—*Haemoproteus danilewskyi*, *Grassi et Fel.*, *Breinl* (*loc. cit.*).

Order PASSERIFORMES.

Fam. MUSCICAPIDAE.

Microeca fascinans (No. 388).—*Halteridium* sp.

Petroica phoenicea (No. 393).—*Halteridium* sp.

Gerygone albogularis (No. 402).—*Halteridium* sp., *Clel.* (Trans. Roy. Soc. S. Austr., vol. xxxix., 1915, p. 29).

Myiagra nitida (No. 446).—*Halteridium* sp.

Fam. TIMELIIDAE.

Pomatorhinus superciliosus (No. 479).—*Halteridium* sp.

Fam. TURDIDAE.

Oreocincla lunulata (No. 488).—*Halteridium* sp.

Fam. SYLVIIDAE.

Megalurus gramineus (No. 496).—*Haemoproteus danilewskyi*,
Grassi et Fel., *Breinl* (*loc. cit.*).

Fam. ?

Grallina picata (No. 575).—*Halteridium* sp.

Corcorax melanorhamphus (No. 577).—*Leucocytozoon anellobiae*.

Fam. PARIDAE.

Aphelocephala leucopsis (No. 578).—*Halteridium* sp.

Fam. ZOSTEROPIDAE.

Zosterops dorsalis (No. 599).—*Halteridium* sp.

Fam. DICAEIDAE.

Dicaeum hirundinaceum (No. 602).—*Halteridium* sp., *Clel.* (*Trans. Roy. Soc. S. Austr.*, xxxix., 1915, p. 29).

Pardalotus melanocephalus (No. 609).—*Halteridium* sp., *Clel.* and *Instn.* (*Jour. and Proc. Roy. Soc. N.S. Wales*, xlv., 1911, p. 418).

Fam. MELIPHAGIDAE.

Melithreptus brevirostris (No. 619).—*Halteridium* sp.

Myzomela sanguineolenta (No. 622).—*Halteridium* sp.; *Leucocytozoon anellobiae*.

Ptilotis fusca (No. 643).—*Halteridium* sp.; *Leucocytozoon anellobiae*.

Ptilotis sonora (No. 646).—*Halteridium* sp.

Ptilotis chrysops (No. 648).—*Halteridium* sp.

Ptilotis plumula (No. 658).—*Halteridium* sp.

Ptilotis penicillata (No. 661).—*Halteridium* sp., *Clel.* (*Trans. Roy. Soc. S. Austr.*, xxxix., 1915, p. 30).

Meliornis novae-hollandiae (No. 688).—*Halteridium* sp.

Myzantha garrula (No. 672).—*Halteridium* sp.; *Leucocytozoon anellobiae*.

Myzantha flavigula (No. 674).—*Halteridium* sp.

Anellobia mellivora (No. 677).—*Leucocytozoon anellobiae*; *Haemoproteus* (*Halteridium*) *danilewskyi*, *Grassi et Fel.*, *Breinl* (*Austr. Inst. Trop. Med.*, Rep. for 1911, p. 38).

Acanthogenys rufigularis (No. 679).—*Halteridium* sp., *Clel.* (*Trans. Roy. Soc. S. Austr.*, xxxix., 1915, p. 30); *Leucocytozoon* sp., *Clel.* (*loc. cit.*, p. 31).

Entomyza cyanotis (No. 680).—*Halteridium* sp.; *Leucocytozoon anellobiae*.

Tropidorhynchus corniculatus (No. 684).—*Halteridium* sp.; *Haemoproteus* (*Halteridium*) *danilewskyi*, *Grassi et Fel.*, *Breinl* (*Austr. Inst. Trop. Med.*, 1911, p. 37); *Leucocytozoon* sp. (*Breinl*, etc., p. 37).

Fam. ORIOLIDAE.

Oriolus viridis (No. 712).—*Halteridium* sp.; *Leucocytozoon anellobiae*.

Sphecotheres maxillaris (No. 714).—*Leucocytozoon anellobiae*.

Fam. DICRURIDAE.

Chibia bracteata (No. 716).—*Haemoproteus* (*Halteridium*) *danilewskyi*, *Grassi et Fel.*, *Breinl* (Austr. Inst. Trop. Med., 1911, p. 38).

Fam. PTILONORYHNCHIDAE.

Chlamydera orientalis (No. 724A).—*Haemoproteus* (*Halteridium*) *danilewskyi*, *Grassi et Fel.*, *Breinl* (Austr. Inst. Trop. Med., 1911, p. 38).

Fam. CORVIDAE.

Cracticus destructor (No. 745).—*Haemoproteus* (*Halteridium*) *danilewskyi*, *Grassi et Fel.*, *Breinl* (*loc. cit.*).

(b) HAEMOFLAGELLATES.

Order ARDEIFORMES.

Notophoyx novae-hollandiae (No. 185).—*Trypanosoma notophoyxis*, *Breinl* (Austr. Inst. Trop. Med., Rep. for 1911, p. 33).

Order ACCIPITRIFORMES.

Haliastur leucosternus (No. 247) (*H. girrenera*).—*Trypanosoma avium*, *Dan.* (*T. majus*, *Dan.*), *Breinl* (Austr. Inst. Trop. Med., Rep. for 1911, p. 31).

Falco hypoleucus (No. 256).—*Trypanosoma avium*, *Dan.*, *Breinl* (Austr. Inst. Trop. Med., Rep. for 1911, p. 31).

Order STRIGIFORMES.

Ninox boobook (No. 263).—*Trypanosoma* sp., *Breinl* (Austr. Inst. Trop. Med., Rep. for 1911, p. 34).

Order PASSERIFORMES.

Fam. MUSCICAPIDAE.

Microeca fascinans (No. 388).—*Trypanosoma anellobiae*.

Fam. MELIPHAGIDAE.

Myzomela sanguineolenta (No. 622).—*Trypanosoma* sp., *Clel.* (Trans. Roy. Soc. S. Austr., xxxix., 1915, p. 31).

Ptilotis fusca (No. 643).—*Trypanosoma anellobiae*.

Ptilotis chrysops (No. 648).—*Trypanosoma* sp., *Clel.* (Trans. Roy. Soc. S. Austr., xxxix., 1915, p. 32).

Anellobia mellivora (No. 677) (*A. chrysoptera*).—*Trypanosoma* sp.

Entomyza cyanotis (No. 680).—*Trypanosoma* sp.

Fam. ORIOLIDAE.

Oriolus viridis (No. 712).—*Trypanosoma* sp.

Fam. PTILONORHYNCHIDAE.

Chlamydera orientalis (No. 724A).—*Trypanosoma chlamydododerae*, *Breinl* (Aust. Inst. Trop. Med., Rep. for 1911, p. 32).

VARIOUS PASSING RECORDS.

Eudytula minor (No. 62).—Nicholls (Emu, xvii., 1918, pp. 129, 130) records the following parasites as present in or on four birds, viz.:—(1) Round worms in upper part of stomach, fleas; (2) worms, lice, and fleas; (3) small round worms, lice; (4) worms, lice.

Phalacrocorax hypoleucus (No. 222).—In three of twelve birds examined in South Australia in March, 1917, parasitic worms were noted by Capt. S. A. White (*Emu*, April, 1918, pp. 214, 215). Capt. White exhibited two tubes of parasitic worms—one from a cormorant's stomach, the other from the thick coating of fat covering the abdomen—at a meeting of the Royal Society of South Australia (*Trans.*, etc., 1916, p. 590).

Ninox rufa (No. 269).—Dr. MacGillivray found parasites under the skin of the head and orbit, N. Queensland (*Emu*, April, 1918, p. 186).

Podargus marmoratus (C.L. 339) (*Micropodargus ocellatus marmoratus*).—Tapeworm in subcutaneous tissue of the abdomen, N. Queensland, MacGillivray (*Emu*, April, 1918, p. 189).

H. L. White, in "North Australian Birds observed by Wm. McLennan" (*Emu*, xvi., pt. iv., pp. 205-230), mentions the finding of the following parasites:—

Turnix castanota (No. 14).—Small worms in chest, abdominal cavity, and eye socket. King River.

Falco lunulatus (No. 258).—Tapeworms in a mass of yellow pus, and a growth containing pus and worms on the left leg. Very small worms in the eye socket and membrane. A short, thick, round worm in the abdominal cavity. A mass of long, thin, round worms over the kidneys and testes; the testes almost totally destroyed. Some of the worms over 6 ins. long. Mornington Island, July, 1915.

Ninox boobook (No. 263).—A mass of worms in the inflamed fibrous membrane on the skull between the eyes; two more in the left eye socket and one in the abdominal cavity.

Ninox connivens (No. 267).—Several worms under the skin of the body and legs.

Ninox rufa (No. 269).—Numerous tapeworms under the skin of the legs. A round worm in the left eye.

Trichoglossus rubritorques (No. 275).—A number of large tape-worms in the abdominal cavity.

Halcyon sanctus (No. 349).—Two large and two small worms in the neck. One large worm in the abdominal cavity.

Graucalus melanops (No. 457).—Small worms in the nictitating membrane. Large tapeworms in the intestine.

Graucalus hypoleucus (No. 458).—Worms under the skin of the thighs.

Colluricincla brunnea (No. 568).—Small worms in the eye membrane and larger ones in the liver. King River.

Colluricincla woodwardi (No. 571).—Worms under the skin. King River.

Philemon sordidus (No. 685A).—A number of worms in the abdominal cavity.

Oriolus flavicinctus (No. 713).—Two small worms in the abdominal cavity.

Pt. II.—PARASITES OF AUSTRALIAN BIRDS THAT HAVE COME UNDER THE WRITER'S NOTICE.

I. Cestodes.

Chalcophaps chrysochlora (No. 29).—Stradbroke Island, Q'land, Sept., 1919.

Phaps elegans (No. 31).—Waitpinga, Encounter Bay, Jan., 1922

- Podiceps poliocephalus* (No. 58).—Muswellbrook, Feb. (Dr. Darnell Smith), cestodes in intestines, the largest in subperitoneal tissue(?), probably from injury.
- Eudyptula minor* (No. 62).—Encounter Bay, Feb., 1921, numerous cestodes in intestines, bird thin; and Jan., 1922 (2, 1 nil, 1 with cestodes).
- Puffinus sphenurus* (No. 69).—Little Bay, Sydney, Dec., 1914 (washed up dead).
- Puffinus griseus* (No. 72).—Washed ashore near Manly, Oct., 1916.
- Puffinus brevicaudus* (No. 74).—Flinders Island, Nov., 1912 (4 birds, 3 nil).
- Sterna cristata* (No. 107).—Encounter Bay, Jan., 1922.
- Pisobia acuminata* (No. 162).—Gular, Oct., 1911 (2 birds).
- Gallinago australis* (No. 166).—Mannum, S. Austr., Nov., 1913.
- Chenopis atrata* (No. 198).—In captivity, Coast Hospital, Sydney, April, 1916, numerous cestodes; Zool. Gardens, Sydney, Mar., 1915.
- Anas superciliosa* (No. 208).—Deniliquin, Mar., 1918 (J. Weir, per W. W. Froggatt); N.S. Wales (ova in tumours of intestine, (?) nematode or cestode, from Dr. Darnell-Smith).
- Teal.—Cobar, Dec., 1911.
- Hieracidea berigora* (No. 259).—Flinders Island, Nov., 1912, cestode(?) (with nematodes in crop and stomach).
- Ninox boobook* (No. 263).—Mannum, S. Austr., Nov., 1913; Flinders Island, Nov., 1912; Bunya Mountains, Q'land, Oct., 1919.
- Trichoglossus swainsoni* (No. 274).—Eidsvold, Q'land, July, 1913 (Dr. T. L. Bancroft); Encounter Bay, Feb., 1921 (nil).
- Cacatua galerita* (No. 291).—Sydney, in captivity, Aug., 1918.
- Barnardius barnardi* (No. 315).—Willbriggie, N.S. Wales, Oct., 1912; near Morgan, Nov., 1913 (nil); Beltana, Aug., 1921 (nil).
- Podargus marmoratus* (No. 339).—Claudie River, N. Q'land, 1913 (Dr. MacGillivray, cestode under skin of abdomen).
- Syma flavirostris* (No. 344).—N. Q'land, 1913 (Dr. MacGillivray, 2, cestodes in subcutaneous tissues of leg in one).
- Halcyon macleayi* (No. 347).—Stradbroke Island, Q'land, Sept., 1919.
- Pitta strepitans* (No. 377).—Bunya Mountains, Q'land, Oct., 1919 (2 with cestodes, 1 nil).
- Cheramoeca leucostenum* (No. 385).—Narrabri, Feb., 1912 (2).
- Petrochelidon nigricans* (No. 386).—Stradbroke Island, Q'land, Sept., 1919.
- Petrochelidon ariel* (No. 387).—Gular, Oct., 1911 (with trematodes); Morgan, 1913 (2 nil).
- Eopsaltria chrysorrhoea* (No. 419).—Stradbroke Island, Q'land, Sept., 1919; Bunya Mountains, Q'land, Oct., 1919 (nil).
- Pachycephala melanura* (No. 426).—Stradbroke Island, Q'land, Sept., 1919 (1 cestodes, 2 nil).
- Pachycephala rufiventris* (No. 430).—Pilliga Scrub, Oct., 1918 (2, 1 nil); Kendall, Jan., 1919 (nil); Stradbroke Island, Q'land, Sept., 1919; Beltana, Aug., 1912 (nil).
- Pachycephala olivacea* (No. 433).—Flinders Island, Nov., 1912.
- Piezorhynchus nitidus* (No. 451).—N. Q'land, 1913 (Dr. MacGillivray, larval cestode(?) in subcuteaneous tissues).
- Coracina parvirostris* (No. 457A).—Flinders Island, Nov., 1912 (small bodies, (?) parasitic).
- Hylacola pyrrhopygia* (No. 474).—Encounter Bay, Jan., 1912; Bumberry, near Manildra, Jan., 1916 (nil).

- Malurus longicaudus* (No. 529).—Flinders Island, Nov., 1912 (9, 2 with cestodes, 2 with filaria in peritoneum, 5 nil).
- Artamus leucogaster* (No. 559).—Stradbroke Island, Q'land, Sept., 1919 (1 cestodes, 1 nil).
- Artamus personatus* (No. 561).—North of Renmark, Jan., 1921.
- Artamus melanops* (No. 562A).—Cobar, Oct., 1911; Gunnedah, Sept., 1914 (nil); Beltana, Aug., 1921 (nil).
- Artamus sordidus* (No. 564).—Hawkesbury River, Oct., 1912 (nil); Manilla, Sept., 1914 (nil); Coonabarabran, Sept., 1914; Upper Manilla, Sept., 1914 (nil); Bibbenluke, N.S. Wales, Mar., 1913 (nil).
- Colluricincla harmonica* (No. 566).—Hawkesbury River, June, 1912 (nil); Coonabarabran, Sept., 1914 (nil); Encounter Bay, Jan., 1921.
- Colluricincla selbii* (No. 567).—Flinders Island, Nov., 1912.
- Corcorax melanorhamphus* (No. 577).—Near Morgan, Nov., 1913; Gunnedah, Sept., 1914 (3, echinorhynchs in 1, nil in 2); Coonabarabran, Sept., 1914; Belaringar, April, 1915 (echinorhynchs and (?) cestodes); Tarcoola, Oct., 1914 (nil); Dubbo, June, 1915 (worms).
- Zosterops dorsalis* (No. 599).—Sydney, June and July, 1912, and Nov., 1911 (all with cestodes), and Aug., 1911 (1), June, 1912 (4), July, 1912 (11), Aug., 1912 (8), and Dec., 1918 (1) (all nil); Flinders Island, Nov., 1912 (3, 2 with cestodes); Bunya Mountains, Q'land, Oct., 1919 (2 nil); Encounter Bay, Jan., 1921 (nil).
- Pardalotus striatus* (No. 603).—Near Morgan, Nov., 1913; Alawoona, S. Austr., Dec., 1913; Beltana, Aug., 1921 (nematode in peritoneum only); north of Renmark, Jan., 1921 (nil).
- Pardalotus affinis* (No. 605) (? all this species).—Flinders Island, Nov., 1912 (4, cestodes in 1, cestodes (?) in 1, nil in 2).
- Glyciphila albifrons* (No. 630).—Overland Corner, S. Austr., Nov., 1913 (2, 1 nil).
- Stigmatops ocularis* (No. 639).—Stradbroke Island, Q'land, Sept., 1919 (2 with cestodes, 1 nil).
- Ptilotis fusca* (No. 643).—Grafton, April, 1912 (2 nil); Molong, Oct., 1913 (nil); Wellington, N.S. Wales, Nov., 1914 (2 nil); Dubbo, July, 1914 (2 nil); French's Forest, Sydney, June, 1915 (nil); Bumberry, near Manildra, Jan., 1916 (cestodes); Bumberry, Oct., 1916 (nil).
- Ptilotis auricomis* (No. 652).—Hawkesbury River, June, 1912; Molong, Oct., 1913 (nil); Grafton, April, 1912 (nil); Hawkesbury River, April, 1913 (nil).
- Ptilotis ornata* (No. 656).—Alawoona, S. Austr., Dec., 1913; Monarto South, May, 1921.
- Meliornis sericea* (No. 669).—Stradbroke Island, Q'land, Sept., 1919 (cestodes in 1, nil in 1).
- Myzantha flavigula* (No. 674).—Tarcoola, Oct., 1914; Belaringar, April and May, 1915 (both nil).
- Acanthogenys rufigularis* (No. 679).—Cobar, Oct., 1911 (nematodes only); Yanco, Oct., 1912 (nil); Overland Corner, S. Austr., Nov., 1913; Narrabri, Nov., 1916 (nil).
- Entomyza cyanotis* (No. 680).—Mannum, Nov., 1913 (2 nil); Bumberry, near Manildra, Jan., 1916.
- Anthus australis* (No. 687).—Flinders Island, Nov., 1912 (2, 1 nil); West Island, Encounter Bay, Jan., 1922 (nil).
- Mirafra horsfieldi* (No. 688).—Encounter Bay, Jan., 1922.

Ptilonorhynchus holosericeus (No. 718).—Bunya Mountains, Q'land, Oct., 1919 (cestodes in 1, nil in 5).

Ailuroedus smithi (No. 720).—Mummulgum, near Casino, Dec., 1916; Bunya Mountains, Q'land, Oct., 1919 (2 nil, 2 with cestodes).

Sericulus chrysocephalus (No. 726).—Bunya Mountains, Q'land, Oct., 1919 (cestode in 1, cestode in abdominal cavity (probably from wound) in 1, nil in 4); Mummulgum, near Casino, Dec., 1916 (nil); Zool. Gardens, Sydney, Nov., 1919 (nil).

Corvus coronoides (No. 732) and *C. australis* (No. 734).—Yanco, Oct., 1912; Flinders Island, Nov., 1912 (1 nil, (?) cestode in 1); Walgett, Sept., 1914 (2 with cestodes); Upper Manilla, Sept., 1914 (nil); Coonabarabran, Sept., 1914 (nil); Moree, Oct., 1914 (2 nil); Tarcoola, Oct., 1914 (nil); Merah, near Moree, Oct., 1914 (2 nil); Belaringar, June, 1915 (3, cestodes in 1); Tarcoola, Oct., 1914 (?sparganum); Bumberry, near Manildra, Jan., 1916.

Corvus cecilae.—Stradbroke Island, Q'land, Sept., 1919 (cestodes in 1, nil in 2).

Strepera graculina (No. 735).—Mount Irvine, June, 1915 (filaria only); Scone, May, 1917 (filaria in 1, nil in 1); Bunya Mountains, Q'land, Oct., 1919 (cestodes only).

2. Nematodes.

Eudyptula minor (No. 62).—Encounter Bay, Feb., 1921 (in stomach), and Jan., 1922 (2, no nematodes).

Pelagodroma marina (No. 65).—Flinders Island, Nov., 1912 (6, nematodes in crop of 1, 5 nil).

Pisobia acuminata (No. 162).—Flinders Island, Nov., 1912 (?nematode in intestine).

Pelecanus conspicillatus (No. 238).—Sep., 1918 (nematodes in stomach).

Astur novae-hollandiae (No. 237).—N. Queensland (Dr. MacGillivray), 1913 (nematode in nictitating membrane of eye).

Falco lunulatus (No. 258).—Flinders Island, Nov., 1912 (filaria in peritoneal cavity).

Hieracidea berigora (No. 59).—Flinders Island, Nov., 1912 (nematodes in stomach and oesophagus, (?) cestodes also).

Ninox rufa (No. 269).—N. Queensland (Dr. MacGillivray), 1913 (3, in orbit of one, orbit and under skin of forehead in another, 2 large flesh-coloured worms in abdominal cavity, and 1 small white worm in chest cavity in third).

Pseudopsittacus maclennani.—N. Queensland (Dr. MacGillivray), 1913 (nematodes in abdominal cavity).

Dacelo gigas (No. 345).—Pilliga Scrub, Oct., 1918 (large nematode in intestine).

Halcyon sanctus (No. 349).—Stradbroke Island, Moreton Bay (?nematodes in intestine and small coiled nematode in peritoneal cavity, from injury to intestine).

Pitta mackloti (No. 378).—N. Queensland (Dr. MacGillivray), 1913.

Petroica phoenicea (No. 393).—Flinders Island, Nov., 1912 (filaria in peritoneal cavity).

Myiagra plumbea (No. 444).—Stradbroke Island, Q'land, Sept., 1919.

Pomatorhinus superciliosus (No. 479).—Baradine, Oct., 1918 (nematode in intestine, also *Echinorhynchus pomatostomi*, subcutaneously).

- Oreocincla macrorhyncha* (No. 488A).—Mount Arthur, near Launceston, Tas., Nov., 1912 (?nematode in intestine).
- Malurus longicaudus* (No. 529).—Flinders Island, Nov., 1912 (9, filaria in peritoneum of 2 birds, cestodes in 2, nil in 5).
- Pardalotus striatus* (No. 603).—See under Cestodes.
- Ptilotis leilavalensis* (No. 661A).—Beltana, Aug., 1921 (nematode attached to outer wall of oesophagus).
- Myzomela flavigula* (No. 674).—North of Renmark, Jan., 1921 (nematodes in pleuro-peritoneal cavity, yellow, as was the fat and skin of the abdomen).
- Acanthogenys rufigularis* (No. 679).—Cobar, Oct., 1911 (nematode only); Yanco, Oct., 1912 (nil); Overland Corner, S. Austr., Nov., 1912 (cestode only); Narrabri, Nov., 1916 (nil).
- Strepera graculina* (No. 735).—Mount Irvine, June, 1915 (filaria in peritoneal cavity); Sccone, May, 1917 (filaria in pleuro-peritoneal cavity in 1, nil in 1); Bunya Mountains, Q'land, Oct., 1919 (cestodes only).
- Domestic pigeons, chiefly squabs about 28 days old.—Numerous small nematodes in intestine, almost blocking it, Sydney, May, 1919; *Ascaridea columbae* (*Gmelin*) (*Heterakis maculosa*, *Schn.*), identified by Miss Irwin Smith.

3. Acanthocephala.

- Baza subcristata* (No. 254).—Mummulgum, N.S. Wales, Dec., 1916, *Centrorhynchus asturinus*, *Jnstn.*
- Seisura inquieta* (No. 443).—Canowindra, 1915 (echinorhynch near rectum).
- Cinclosoma cinnamomeum* (No. 468).—(?) Locality, larval *Echinorhynchus pomatostomi*, *C.* and *J.*, in subcutaneous tissue of neck (Dr. MacGillivray).
- Psophodes crepitans* (No. 476).—Bunya Mountains, Q'land, Oct., 1919.
- Pomatorhinus temporalis* (No. 478).—Canowindra, 1915 (3, larval *E. pomatostomi*).
- Pomatorhinus superciliosus* (No. 479).—Hallett Cove, S. Austr., May, 1910, larval *E. pomatostomi* subcutaneously; Baradine, Oct., 1918, larval *E. pomatostomi* subcutaneously (also nematodes in intestine).
- Oreocincla lunulata* (No. 488).—Bunya Mountains, Q'land, Oct., 1919 (echinorhynchs in 5); Kuitpo, S. Austr., May, 1921, larval *E. pomatostomi* subcutaneously.
- Corcorax melanorhamphus* (No. 577).—Near Morgan, Nov., 1913 (cestode only); Gunnedah, Sept., 1914 (3, echinorhynch in 1); Coonabarabran, Sept., 1914 (cestode only); Belaringar, April, 1915 (echinorhynchs and cestodes ?); Tarcoola, Oct., 1914 (nil); Dubbo, June, 1915 (worms).
- Aphelocephala leucopsis* (No. 578).—Hallett Cove, S. Austr., May, 1910, larval *E. pomatostomi* subcutaneously; Gular, Oct., 1911 (2 nil); Narrabri, Feb., 1912 (nil); Overland Corner, S. Austr., Dec., 1913 (nil); Mount Lofty Ranges, Nov., 1912 (nil); north of Renmark, Jan., 1921 (nil).
- Climacteris scandens* (No. 592) (*C. picumnus*).—Near Morgan, Nov., 1913 (2, larval *E. pomatostomi* and (?) worm in intestine in 1, nil in 1).

4. Trematodes.

Petrochelidon ariel (No. 387).—Gular, Oct., 1911, type of *Plagiorcis clelandi*, *S. J. Johnston* (with cestodes in intestines); Morgan, Nov., 1913 (2, both nil).

5. Species of Birds Examined in which Entozoa (excluding Haematozoa) have not been detected by the Writer.

- Leipoa ocellata* (No. 6).—Zool. Gardens, Sydney (2 birds).
- Coturnix pectoralis* (No. 8).—Encounter Bay, Jan., 1922 (2).
- Turnix varia* (No. 13).—Flinders Island, Nov., 1922.
- Turnix velox* (No. 16).—Near Broken Hill, April, 1917.
- Geopelia humeralis* (No. 26).—Stradbroke Island, Q'land, Sept., 1919.
- Geopelia tranquilla* (No. 27).—Coonamble, Aug., 1912; Mannum, S. Austr., Nov., 1913 (2).
- Phaps chalcoptera* (No. 30).—Overland Corner, S. Austr., Dec., 1913.
- Ocyphaps lophotes* (No. 39).—Parachilna, Aug., 1921.
- Leucosarcia picata* (No. 40).—Bunya Mountains, Q'land, Oct., 1919.
- Haematopus fuliginosus* (No. 126).—Flinders Island, Nov., 1912.
- Lobivanellus lobatus* (No. 128).—Upper Manilla, Sept., 1914.
- Spoonbill (white).—Taronga Zool. Park, June, 1919.
- Astur novae-hollandiae* (No. 237).—Taronga Zool. Park, April, 1919.
- Astur approximans* (No. 228).—N.S. Wales, April, 1912.
- Uroaëtus audax* (No. 243).—Nevertire, Aug., 1919.
- Haliastur sphenurus* (No. 248).—Coonamble, Aug., 1912; Tarcoo, Oct., 1914.
- Calyptorhynchus baudini* (No. 284).—Taronga Zool. Park (from W. Austr.), Aug., 1919.
- Calyptorhynchus leachi* (No. 289).—Narrabri, Nov., 1916 (2 birds); Dorrigo, Jan., 1918.
- Cacatua gymnopis* (No. 293).—Beltana, Aug., 1921.
- Cacatua roseicapilla* (No. 295).—Belaringar, April, 1915.
- Aprosmictus scapulatus* (No. 303).—Bunya Mountains, Q'land, Oct., 1919 (3).
- Platycercus pennanti* (No. 304).—Wagga, July, 1914 (2); Mount Irvine, June, 1915; Bunya Mountains, Q'land, Oct., 1919 (7).
- Platycercus flaveolus* (No. 306).—Morgan, S. Austr., Nov., 1913 (3).
- Platycercus flaviventris* (No. 307).—Flinders Island, Nov., 1913 (4).
- Platycercus eximius* (No. 311).—Belaringar, May, 1915; Dubbo, July, 1915 (2); Kendall, Aug., 1918.
- Psephotus haematogaster* (No. 319).—Belaringar, May, 1915.
- Psephotus multicolor* (No. 323).—North of Renmark, Jan., 1921 (2).
- Psephotus haematonotus* (No. 324).—Cowra, Sept., 1911; Coonamble, Aug., 1912; Mannum, S. Austr., Nov., 1913 (2); Goolwa, Nov., 1921.
- Euphema elegans* (No. 327).—Encounter Bay, Jan., 1921, and Jan., 1922.
- Euphema pulchella* (No. 330).—Narrabri, June, 1919.
- Lathamus discolor* (No. 332).—Flinders Island, Nov., 1912.
- Eurystomus pacificus* (No. 341).—Scone, Oct., 1917.
- Halcyon pyrrhopygia* (No. 348).—Near Morgan, S. Austr., Nov., 1913.
- Merops ornatus* (No. 352).—Coonabarabran, Sept., 1914.
- Cuculus pallidus* (No. 361).—N.S. Wales, Nov., 1911.

- Cacomantis flabelliformis* (No. 362).—Flinders Island, Nov. 1913 (2).
- Chalcococcyx basalis* (No. 366).—Flinders Island, Nov., 1913; Overland Corner, S. Austr., Dec., 1913.
- Eudynamis cyanocephala* (No. 371).—Mummulgum, near Casino, Dec., 1916 (2 birds).
- Microeca fascinans* (No. 388).—Sydney, Nov., 1911; Morgan, S. Austr., Nov., 1913.
- Petroica leggii* (No. 392).—Flinders Island, Nov., 1911.
- Petroica phoenicea* (No. 393).—Flinders Island, Nov., 1911.
- Petroica goodenovii* (No. 394).—Beltana, Aug., 1922.
- Erythrodryas rosea* (No. 396).—Hawkesbury River, June, 1912.
- Melanodryas bicolor* (No. 397).—Pilliga Scrub, Oct., 1918; Encounter Bay, Jan., 1921.
- Amaurodryas vittata* (No. 398).—Flinders Island, Nov., 1911 (2).
- Orthonyx spinicaudis* (No. 464).—Dorrigo, Jan., 1918 (2 birds).
- Smicrornis brevirostris* (No. 400).—Morgan, Nov., 1913; Scone, May, 1917; Dubbo, Aug., 1917; Pilliga Scrub, Oct., 1918; north of Renmark, Jan., 1921.
- Gerygone albogularis* (No. 402).—Molong, Oct., 1913.
- Gerygone fusca* (No. 405).—Lisarow, May, 1915.
- Eopsaltria australis* (No. 418).—Molong, Oct., 1913.
- Falcunculus frontatus* (No. 422).—Mount Irvine, June, 1915.
- Oreoica cristata* (No. 425).—North of Renmark, Jan., 1921.
- Pachycephala gutturalis* (No. 428).—Bunya Mountains, Q'land, Oct., 1919 (2); Encounter Bay, Jan., 1922.
- Pachycephala glaucura* (No. 429).—Flinders Island, Nov., 1912 (3).
- Rhipidura diemenensis* (No. 436A).—Flinders Island, Nov., 1912 (3).
- Rhipidura rufifrons* (No. 439).—Mummulgum, near Casino, Dec., 1916; Bunya Mountains, Q'land, Oct., 1919.
- Rhipidura motacilloides* (No. 442).—Sydney, Nov., 1911.
- Monarcha carinata* (No. 455).—Bunya Mountains, Q'land, Oct., 1919.
- Graucalus melanops* (No. 457).—Tarcoo, Oct., 1914; Upper Manilla, Sept., 1914; Beltana, Aug., 1921.
- Graucalus parvirostris* (No. 457A).—Flinders Island, Nov., 1912 (4).
- Graucalus mentalis* (No. 459).—Coonabarabran, Sept., 1914.
- Campephaga humeralis* (No. 462).—Hawesbury River, Oct., 1912; Baan Baa, Jan., 1917 (young bird).
- Campephaga leucomela* (No. 463).—Stradbroke Island, Q'land, Sep., 1919.
- Cinclosoma punctatum* (No. 466).—Encounter Bay, Jan., 1922.
- Cinclosoma castanonotum* (No. 467).—Alawoona, S. Austr., Dec., 1913 (2).
- Drymodes brunneopygius* (No. 472).—Alawoona, S. Austr., Dec., 1913.
- Hylacola cauta* (No. 475).—Monarto South, S. Austr., May, 1921.
- Cincloramphus cruralis* (No. 484).—Near Broken Hill, April, 1917.
- Cincloramphus rufescens* (No. 485).—Pilliga Scrub, Oct., 1918 (2).
- Ephthianura albifrons* (No. 489).—Flinders Island, Nov., 1913; Encounter Bay, Jan., 1921 (2).
- Ephthianura tricolor* (No. 490).—Molong, Oct., 1913 (3); Parachilna, S. Austr., Aug., 1921.
- Ephthianura aurifrons* (No. 491).—Broken Hill, April, 1917; Parachilna, S. Austr., Aug., 1921.
- Origma rubricata* (No. 500).—Sydney, April, 1912.
- Chthonicola sagittata* (No. 501).—The Oaks, N.S. Wales, June, 1914; Baan Baa, near, Boggabri, Jan., 1917.

- Acanthiza nana* (No. 503).—Hawkesbury River, May, 1915; Dubbo, Mar., 1915; Pilliga Scrub, Oct., 1918; Narrabri, June, 1919; Bunya Mountains, Oct., 1919.
- Acanthiza reguloides* (No. 507).—Bibbenluke, Mar., 1913; Pilliga Scrub, Oct., 1918; Bunya Mountains, Q'land, Oct., 1919.
- Acanthiza chrysorrhoa* (No. 508).—Scone, May, 1917.
- Acanthiza uropygialis* (No. 509).—Yanco, Oct., 1912; Mannum, Nov., 1913; Overland Corner, S. Austr., Dec., 1913; Dubbo, July, 1915 (2); Baan Baa, Jan., 1917; Beltana, Aug., 1921; north of Renmark, Jan., 1921.
- Acanthiza lineata* (No. 511).—Sydney, Nov., 1912; Bell, June, 1915; Bunya Mountains, Oct., 1919; Encounter Bay, Jan., 1921, and Jan., 1922.
- Acanthiza pusilla* (No. 512).—Kurrajong, Aug., 1912; Bibbenluke, N.S. Wales, Mar., 1913; Bunya Mountains, Q'land, Oct., 1919 (2).
- Acanthiza diemenensis* (No. 512A).—Flinders Island, Nov., 1913 (2).
- Acanthiza pyrrhopygia* (No. 516).—Monarto South, S. Austr., July, 1914; Encounter Bay, Feb., 1921.
- Acanthiza albiventris* (No. 516A).—Pilliga Scrub, Oct., 1918.
- Pyrrholaemus brunneus* (No. 517).—Renmark, Jan., 1921.
- Sericornis citreigularis* (No. 518).—Mount Irvine, June, 1915; Bunya Mountains, Q'land, Oct., 1919 (2).
- Sericornis frontalis* (No. 519).—Lisarow, May, 1915 (2); Mount Irvine, June, 1915; Canobolas, Oct., 1916 (2); Bunya Mountains, Q'land, Oct., 1919.
- Sericornis magnirostris* (No. 521).—Bunya Mountains, Q'land, Oct., 1919.
- Sericornis humilis* (No. 524).—Flinders Island, Nov., 1912 (5).
- Malurus cyaneus* (No. 530).—Sydney, Nov., 1911; Kuitpo, S. Austr., May, 1921.
- Malurus cyanochlamys* (No. 530A).—Bunya Mountains, Q'land, Oct., 1919 (5).
- Malurus melanotus* (No. 532).—Overland Corner, S. Austr., Dec., 1913 (4).
- Malurus cyanotus* (No. 535).—Beltana, Aug., 1921.
- Malurus assimilis* (No. 538).—Alawoona, S. Austr., Dec., 1913 (2); Beltana, Aug., 1921.
- Malurus melanocephalus* (No. 542).—Mummulgum, near Casino, Dec., 1916.
- Artamus superciliosus* (No. 560).—Cowra, Sept., 1911; Sydney, Oct., 1919.
- Colluricincla rufigaster* (No. 573).—Stradbroke Island, Sept., 1914 (4).
- Grallina picata* (No. 575).—Cowra, Sept., 1911; Pennant Hills, Sydney, Dec., 1916 (D. Steel).
- Struthidea cinerea* (No. 576).—Gunnedah, Sept., 1914 (3); Coonabarabran, Sept., 1914; Belaringar, April, 1915.
- Neositta chrysoptera* (No. 583).—Hawkesbury River, June, 1912.
- Neositta pileata* (No. 586).—Encounter Bay, Feb., 1921.
- Climacteris picurna* (No. 592) (*scandens*).—Narrabri, Feb., 1912; Molong, Oct., 1913; Baradine, Oct., 1918.
- Climacteris leucophaea* (No. 593).—Bunya Mountains, Q'land, Oct., 1919.
- Pardalotus punctatus* (No. 606).—Flinders Island, Nov., 1912.
- Pardalotus xanthopygius* (No. 607).—Mannum, Nov., 1913.

- Pardalotus melanocephalus* (No. 609).—Stradbroke Island, Q'land, Sept., 1919.
- Melithreptus lunulatus* (No. 613).—Sydney, Nov., 1911 (2), and May, 1912; Hawkesbury River, June, 1912 (2); Stradbroke Island, Q'land, Sept., 1919; Kuitpo, S. Austr., May, 1921.
- Melithreptus brevirostris* (No. 619).—Sydney, April, 1912; Hawkesbury River, June, 1912; Mannum, S. Austr., Nov., 1913 (3); Scone, May, 1917; Bumbery, Oct., 1916; Encounter Bay, Jan., 1921.
- Melithreptus melanocephalus* (No. 620).—Flinders Island, Nov., 1912.
- Myzomela sanguineolenta* (No. 622).—Kendall, Jan., 1919.
- Myzomela nigra* (No. 624).—Molong, Oct., 1913.
- Glycyphila fulvifrons* (No. 629).—Flinders Island, Nov., 1912 (4); French's Forest, Sydney, June, 1915.
- Meliphaga phrygia* (No. 638).—Bumbery, Sept., 1916.
- Ptilotis chrysotis* (No. 644).—Bunya Mountains, Q'land, Nov., 1919.
- Ptilotis sonora* (No. 646).—Mannum, S. Austr., Nov., 1913; Parachilna, S. Austr., Aug., 1921; Encounter Bay, Jan., 1922.
- Ptilotis chrysops* (No. 648).—Hawkesbury River, June, 1912; Kurrajong, Aug., 1912; Hawkesbury River, Nov., 1914, and May, 1915.
- Ptilotis flavigula* (No. 649).—Flinders Island, Nov., 1912 (3).
- Ptilotis leucotis* (No. 651).—Dubbo, Aug., 1917.
- Ptilotis ornata* (No. 656).—Morgan, Nov., 1913 (2); Monarto South, S. Austr., July, 1914.
- Ptilotis plumula* (No. 658).—North of Renmark, Jan., 1921.
- Ptilotis penicillata* (No. 661).—Narrabri, Feb., 1912; near Morgan, S. Austr., Nov., 1913 (2); Overland Corner, S. Austr., Dec., 1913; Pilliga Scrub, Oct., 1918.
- Lichmera australasiana* (No. 667).—Flinders Island, Nov., 1912.
- Myzantha garrula* (No. 672).—Gunnedah, Sept., 1914 (4); Upper Manilla, Sept., 1914; Hawkesbury River, May, 1915; Belar-ringar, April (2) and May, 1915; Scone, May, 1917.
- Anthochaera carunculata* (No. 675).—Hawkesbury River, July, 1912 (3); Sept., 1912 (4); Scone, May, 1917.
- Tropidorhynchus corniculatus* (No. 684).—Hawkesbury River, May, 1915.
- Philemon citreogularis* (No. 685).—Cowra, Sept., 1911; Dubbo, Aug., 1917.
- Zonaeginthus bellus* (No. 693).—Flinders Island, Nov., 1912.
- Stizoptera bichenovii* (No. 697).—Narrabri, June, 1919 (3).
- Aegintha temporalis* (No. 703).—Gosford, May, 1915 (4); Encounter Bay, Jan., 1922.
- Ptiloris paradisea* (No. 728).—Bunya Mountains, Q'land, Oct., 1919 (4).
- Strepera arguta* (No. 736).—Flinders Island, Nov., 1912 (2).
- Cracticus destructor* (No. 745).—Tarcoola, Oct., 1914.
- Gymnorhina tibicen* (No. 747).—Upper Manilla, Sept., 1914; Tarcoola, Dec., 1914.
- Turtur ferrago* (introduced Dove).—Sydney, Nov., 1911, and Mar., 1917.
- Sturnus vulgaris* (Starling).—Gunnedah, Sept., 1914 (5, young); Wagga, Aug., 1914 (2).
- Passer domesticus* (Sparrow).—Sydney, Nov., 1911, and June, 1917.

6. Siphonaptera (Fleas).

Eudyptula minor (No. 62).—Bird Island, Rockingham, W. Austr., Nov., 1906 (*Parapsyllus australiacus*, *Rothsch.*, Nov. Zool., xvi., 1909, p. 62, *in cop.*); Flinders Island, Nov., 1912 (*P. australiacus*, determined by N. C. Rothschild); Encounter Bay, Feb., 1921 (no fleas, mallophaga), and Jan., 1922 (no fleas, mallophaga).

Puffinus brevicaudus (No. 74).—Flinders Island, Nov., 1912 (*P. australiacus*, *Rothsch.*; doubtful as to whether a stray).

7. Diptera.

Petrochelidon ariel (No. 387).—Near Morgan, S. Austr., Nov., 1913
Ornithomyia australasiae *Leach*(?), identified at British Museum.

8. Mallophaga.

Coturnix pectoralis (No. 8).—Encounter Bay, Jan., 1911 (1 nil, 1 mallophaga on wings).

Turnix velox (No. 16).—Near Broken Hill, April, 1917.

Phaps elegans (No. 31).—Waitpinga, Encounter Bay, Jan., 1922.

Eudyptula minor (No. 62).—See under Siphonaptera.

Pelagodroma marina (No. 65).—Flinders Island, Nov., 1912 (1 mallophaga, 1 nil).

Puffinus sphenurus (No. 69).—Little Bay, Sydney, Dec., 1914 (washed ashore).

Puffinus brevicaudus (No. 74).—Flinders Island, Nov., 1912 (2).

Prion banksi (No. 89).—Cronulla, Aug., 1911 (washed up).

Sterna cristata (No. 107).—Encounter Bay, Jan., 1922.

Haematopus fuliginosus (No. 126).—Flinders Island, Nov., 1912 (1 mallophaga, 1 nil).

Lobianellus lobatus (No. 128).—Upper Manilla, Sept., 1914 (mallophaga and mites).

Himantopus leucocephalus (No. 142).—(?) Locality (Dr. D'Ombrain).

Pisobia acuminata (No. 162).—Gular, Oct., 1911; Flinders Island, Nov., 1912 (nil); Cape York or south-west of Queensland, Dec., 1912 (Dr. MacGillivray).

Rhynchosaea australis (No. 167).—Cape York or south-west of Queensland, Dec., 1912 (Dr. MacGillivray).

Chenopis atrata (No. 198).—In captivity, Coast Hospital, Sydney, April, 1916; Zool. Gardens, Sydney.

Cereopsis novae-hollandiae (No. 202).—Cape Barren Island, Bass Straits, Nov., 1912.

Astur approximans (No. 238).—N.S. Wales, April, 1912.

Uroaetus audax (No. 243).—Nevertire, Aug., 1919.

Haliastur sphenurus (No. 248).—Coonamble, Aug., 1912; Tarcoo, Oct., 1914.

Kestrel.—From Dr. D'Ombrain.

Hieracidea berigora (No. 259).—Flinders Island, Nov., 1912.

Hieracidea occidentalis (No. 260).—Narrabri, Jan., 1918.

Trichoglossus swainsoni (No. 274).—Encounter Bay, Jan., 1921.

Calyptorhynchus leachi (No. 289).—Narrabri, Nov., 1916 (2); Dorrigo, Jan., 1918 (nil).

Eclectus macgillivrayi.—North Queensland (Dr. MacGillivray).

Platycercus flaviventris (No. 307).—Flinders Island, Nov., 1912.

Platycercus eximius (No. 311).—Belaringar, May, 1915; Dubbo, July, 1915 (2 nil); Kendall, Aug., 1918 (nil).

- Psephotus haematonotus* (No. 324).—Cowra, Sept., 1911 (nil); Coonamble, Aug., 1912.
- Lathamus discolor* (No. 332).—Flinders Island, Nov., 1912.
- Eurystomus pacificus* (No. 341).—Scone, Oct., 1917.
- Haleyon macleayi* (No. 347).—Stradbroke Island, Q'land, Sept., 1919.
- Merops ornatus* (No. 352).—Coonabarabran, Sept., 1914.
- Eudynamis cyanocephala* (No. 371).—Mummulgum, near Casino, Dec., 1916 (2).
- Erythrodryas rosea* (No. 396).—Hawkesbury River, June, 1912.
- Monarcha carinata* (No. 455).—Ourimbah, Nov., 1911.
- Graucalus melanops* (No. 457).—Upper Manilla, Sept., 1914; Tarcoo, Oct., 1914 (2 nil); Beltana, Aug., 1921 (nil).
- Graucalus parvirostris* (No. 457A).—Flinders Island, Nov., 1912 (2).
- Graucalus mentalis* (No. 459).—Coonabarabran, Sept., 1914.
- Oreocincla lunulata* (No. 488).—Bunya Mountains, Q'land, Oct., 1919; Kuitpo, S. Austr., May, 1921 (nil).
- Chthonicola sagittata* (No. 501).—The Oaks, June, 1914.
- Acanthiza nana* (No. 503).—The Oaks, June, 1914 (nil); Bunya Mountains, Q'land, Oct., 1919.
- Acanthiza reguloides* (No. 507).—The Oaks, June, 1914 (2).
- Acanthiza chrysorrhoa* (No. 508).—The Oaks, June, 1914; Dubbo, July, 1915 (nil); Scone, May, 1917 (nil); Beltana, Aug., 1921 (nil).
- Acanthiza uropygialis* (No. 509).—Dubbo, Sept., 1911 (2), and July, 1915 (2 nil); Beltana, Aug., 1921 (nil).
- Acanthiza lineata* (No. 511).—Mount Irvine, June, 1915 (nil); Uralla, June, 1915 (nil); Encounter Bay, Jan., 1921 (nil), and Jan., 1922 (mallophaga).
- Artamus sordidus* (No. 564).—Coonabarabran, Sept., 1914 (mallophaga, no mites); Hawkesbury River, Oct., 1912 (nil); Upper Manilla, Sept., 1914 (mites, no mallophaga).
- Colluricincla harmonica* (No. 566).—Hawkesbury River, June, 1912 (mallophaga, no mites); Coonabarabran, Sept., 1914 (no mallophaga, mites); Encounter Bay, Jan., 1922 (mallophaga and mites).
- Struthidea cinerea* (No. 576).—Coonabarabran, 1914 (mallophaga and mites); Belaringar, April, 1915 (nil); Gunnedah, 1914 (1 with mallophaga and mites, 1 with mites, 1 nil).
- Corcorax melanorhamphus* (No. 577).—Coonabarabran, 1914 (mallophaga, no mites); Belaringar, April, 1915 (numerous nits, one mallophaga); Tarcoo, Oct., 1914 (mallophaga); Gunnedah, 1914 (nil); Dubbo, July, 1915 (mallophaga, (?) two species, no mites).
- Melithreptus lunulatus* (No. 613).—Sydney, Nov., 1911; Hawkesbury River, June, 1912 (no mallophaga, mites); Abbotsford, Sydney, Nov., 1911 (Melithreptus, probably *M. lunulatus*); Sydney, April, 1912 (no mallophaga, mites); Kuitpo, S. Austr., May, 1921 (nil).
- Melithreptus brevirostris* (No. 619).—N.S. Wales; Scone, May, 1917; Encounter Bay, Jan., 1921 (nil).
- Myzomela sanguineolenta* (No. 622).—Sydney, Oct., 1919 (Dr. D'Ombrain); Kendall, Jan., 1919 (nil).
- Ptilotis auricomis* (No. 652).—Hawkesbury River, June, 1912.
- Myzantha garrula* (No. 672).—Belaringar, April, 1915 (2, 1 with mallophaga), and May, 1915 (nil); Gunnedah, 1914 (4 with mites and no mallophaga); Upper Manilla, Sept., 1914 (mallophaga and no mites); Cobar, Nov., 1911 (perhaps *M. flavigula*); Scone, May, 1917.

- Myzantha flavigula* (No. 674).—Belaringar, April, 1915 (mallophaga) and May, 1915 (nil); Tarcoo, Oct., 1915 (nil).
- Anthochaera carunculata* (No. 675).—Hawkesbury River, July, 1912 (4, mallophaga and mites in 1, mallophaga only in 3); Scone, May, 1917 (nil).
- Philemon citreogularis* (No. 685).—Cowra, Sept., 1911; Gular, Oct., 1911.
- Ptilonorhynchus holosericeus* (No. 718).—Bunya Mountains, Q'land, Oct., 1919.
- Ailuroedus smithi* (No. 720).—Mummulgum, near Casino, Dec., 1916.
- Sericulus chrysocephalus* (No. 726).—Bunya Mountains, Q'land, Oct., 1919; Zool. Gardens, Sydney, Nov., 1919.
- Corvus coronoides* (No. 732).—Cobar, Nov., 1911; Belaringar, June, 1915 (3, all with mallophaga and 1 with mites also); Coonabarabran, Sept., 1914 (mallophaga and mites); Upper Manilla, Sept., 1914 (mallophaga and mites); Tarcoo, Oct., 1914 (2, 1 mallophaga only, 1 nil).
- Corvus cecilae* (No. 733).—(?) Locality (Dr. MacGillivray).
- Strepera graculina* (No. 735).—Scone, May, 1917 (2, mallophaga on 1, nil on 1).
- Strepera arguta* (No. 736).—Flinders Island, Nov., 1912.
- Gymnorhina tibicen*, (No. 747).—Cobar, Nov., 1911 (either *G. tibicen* or *G. leuconota*); Upper Manilla, Sept., 1914 (mallophaga and mites); Tarcoo, Oct., 1914 (nil).
- Sturnus vulgaris* (English Starling).—Wagga, Aug., 1914.

9. Ticks.

- Eudyptula minor* (No. 62).—Rockingham, W. Austr., Nov., 1906
- Ornithodoros taljae* (*Guérin-Méneville*)? (larvae) and *Ixodes percaevatus*, *Neum.*, identified by Nuttall and Warburton; Flinders Island, Bass Straits, Nov., 1912; Encounter Bay, Feb., 1921 (mallophaga only).
- Pitta strepitans* (No. 377).—Bunya Mountains, Q'land, Oct., 1919, *Ixodes holocyclus*, *Neum.*, round head.
- Petrochelidon ariel* (No. 387).—Bumbery, N.S. Wales, Oct., 1916, *Argas lagenoplastis*, *Frogg.*, in nests.
- Sericornis citreigularis* (No. 518).—Bunya Mountains, Q'land, Oct., *Ixodes holocyclus*, *Neum.*, round head.

10. Mites.

- Lobivanellus lobatus* (No. 128).—See under Mallophaga.
- Pachycephala gutturalis* (No. 428).—Uralla, June, 1915 (nil); Encounter Bay, Jan., 1922 (mites on wings).
- Orthonyx spinicaudus* (No. 464).—Dorrigo, Jan., 1918 (2).
- Cinclosoma punctatum* (No. 466).—Encounter Bay, Jan., 1922 (on wings).
- Pomatorhinus temporalis* (No. 478).—Canowindra, 1915 (3, red mites on 1).
- Origma rubricata* (No. 500).—Sydney, April, 1912.
- Malurus longicaudus* (No. 529).—Flinders Island, Nov., 1912.
- Malurus cyanotus* (No. 535).—Beltana, Aug., 1921 (under wings).
- Artamus sordidus* (No. 564).—See under Mallophaga.
- Colluricinclia harmonica* (No. 566).—See under Mallophaga.
- Neositta chrysoptera* (No. 583).—Hawkesbury River, June, 1912.
- Climacteris scandens* (*picumna*) (No. 592).—Narrabri, Feb., 1912.

- Zosterops dorsalis* (No. 599).—Sydney, Aug., 1911 (nil), June, 1912 (4, 2 nil), July, 1912 (12, 11 nil), Aug., 1912 (8 nil), and Dec., 1918 (1. nil).
- Melithreptus lunulatus* (No. 613).—See under Mallophaga.
- Myzantha garrula* (No. 672).—See under Mallophaga.
- Anthochaera carunculata* (No. 675).—See under Mallophaga.
- Philemon citreogularis* (No. 685).—Dubbo, Aug., 1917.
- Zonaeginthus bellus* (No. 693).—Flinders Island, Nov., 1912.
- Aegintha temporalis* (No. 703).—Gosford, May, 1915 (4 with mites); Encounter Bay, Jan., 1922, nil.
- Corvus coronoides* (No. 732).—See under Mallophaga.
- Cracticus destructor* (No. 745).—Tarcoola, Oct., 1914.
- Gymnorhina tibicen* (No. 747).—See under Mallophaga.
- Sturnus vulgaris* (English Starling).—Gunnedah, 1914 (2, young, 1 with mites).

III. No Ectozoa Detected.

- Geopelia tranquilla* (No. 27).—Coonamble, Aug., 1912.
- Ochyphaps lophotes* (No. 39).—Parachilna, Aug., 1921.
- Ninox boobook* (No. 263).—Flinders Island, Nov., 1912; Mannum, S. Austr., Nov., 1913.
- Cacatua gymnopsis* (No. 293).—Beltana, Aug., 1921.
- Cacatua roseicapilla* (No. 295).—Belaringar, April, 1915.
- Platycercus pennanti* (No. 304).—Mount Irvine, June, 1915.
- Psephotus haematonotus* (No. 319).—Belaringar, May, 1915.
- Euphema elegans* (No. 327).—Encounter Bay, January, 1922.
- Cuculus pallidus* (No. 361).—Upper Manilla, Sept., 1914.
- Cacomantis flabelliformis* (No. 362).—N.S. Wales, Nov., 1911.
- Microeca fascinans* (No. 388).—Sydney, Nov., 1911.
- Petroica phoenicea* (No. 393).—Flinders Island, Nov., 1912.
- Petroica goodenovii* (No. 394).—Beltana, Aug., 1921.
- Melanodryas bicolor* (No. 397).—Encounter Bay, Jan., 1921.
- Smicrornis brevirostris* (No. 400).—Scone, May, 1917; Dubbo, Aug., 1917.
- Gerygone fusca* (No. 405).—Lisarow, May, 1915.
- Pachycephala rufiventris* (No. 430).—Kendall, Jan., 1919; Beltana, Aug., 1921.
- Myiagra plumbea* (No. 444).—Hawkesbury River, Oct., 1912.
- Campephaga humeralis* (No. 462).—Hawkesbury River, Oct., 1912.
- Hylacola pyrrhopygia* (No. 474).—Encounter Bay, Jan., 1921.
- Hylacola cauta* (No. 475).—Monarto South, May, 1921.
- Cincloramphus cruralis* (No. 484).—Near Broken Hill, April, 1917.
- Epthianura albifrons* (No. 489).—Encounter Bay, Jan., 1921 (2).
- Epthianura tricolor* (No. 490).—Parachilna, Aug., 1921.
- Epthianura aurifrons* (No. 491).—Broken Hill, April, 1917; Parachilna, Aug., 1921.
- Sericornis frontalis* (No. 519).—Lisarow, May, 1915 (2).
- Malurus cyaneus* (No. 530).—Sydney, Nov., 1911; Kuitpo, S. Austr., May, 1921.
- Malurus assimilis* (No. 538).—Beltana, Aug., 1921.
- Artamus superciliosus* (No. 560).—Cowra, Sept., 1911.
- Artamus melanops* (No. 562A).—Gunnedah, 1914; Beltana, Aug., 1921.
- Grallina picata* (No. 575).—Cowra, Sept., 1911; Pennant Hills, Sydney, Dec., 1916 (D. Steel).
- Aphelocephala leucopsis* (No. 578).—Gular, Oct., 1911 (2); Yanco, Oct., 1912; Mount Lofty Ranges, Nov., 1920.
- Pardalotus striatus* (No. 603).—North of Renmark, Jan., 1921.

- Pardalotus affinis* (No. 605).—Flinders Island, Nov., 1912.
Pardalotus xanthopygius (No. 607).—Mannum, S. Austr., Nov., 1913.
Glyciphila fulvifrons (No. 629).—French's Forest, near Sydney, June, 1915.
Ptilotis fusca (No. 643).—French's Forest, June, 1915; Dubbo, July, 1915.
Ptilotis sonora (No. 646).—Parachilna, Aug., 1921; Encounter Bay, Jan., 1922.
Ptilotis chrysops (No. 648).—Hawkesbury River, June, 1912, and Nov., 1914.
Ptilotis leucotis (No. 651).—Dubbo, Aug., 1917.
Ptilotis ornata (No. 656).—Monarto South, May, 1921.
Lichmera australasiana (No. 667).—Flinders Island, Nov., 1912.
Ptilotis leilavalensis (No. 661A).—Beltana, Aug., 1921.
Acanthogenys rufigularis (No. 679).—Narrabri, Nov., 1916.
Anthus australis (No. 687).—West Island, Encounter Bay, Jan., 1922.
Mirafra horsfieldi (No. 688).—Encounter Bay, Jan., 1922.
Turtur ferrago (introduced Dove).—Sydney, Mar., 1917.
Passer domesticus (Sparrow).—Sydney, June, 1917.

12. Haematozoa.

(a) HALTERIDIA IN THE RED CORPUSCLES.

- Eudynamis cyanocephala* (No. 371).—Mummulgum, near Casino, Dec., 1916 (halteridia in 2 with gametes in both).
Melithreptus brevirostris (No. 619).—Encounter Bay, Feb., 1921; Monarto South, Oct., 1920 (nil).
Ptilotis leilavalensis (No. 661A).—Beltana, Aug., 1921.
Acanthogenys rufigularis (No. 679).—Narrabri, Nov., 1916 (one seen, occupying both ends of the red cell and one side); Monarto South, Oct., 1920 (nil).
Tropidorhynchus corniculatus (No. 684).—Milson Island, Hawkesbury River, May, 1915 (with Leucocytozoon).

(b) TRYPARANOSOMES IN THE BLOOD.

- Pachycephala melaneura* (No. 426).—Stradbroke Island, Q'land, Sept., 1919.
Entomyza cyanotis (No. 680).—Bumberry, Jan., 1916 (one degenerated trypanosome seen, with Leucocytozoon).

(c) LEUCOCYTOZOA IN THE BLOOD.

- Entomyza cyanotis* (No. 680).—Bumberry, Jan., 1916 (with trypanosomes).
Tropidorhynchus corniculatus (No. 684).—Milson Island, Hawkesbury River, May, 1915 (with Halteridium).
Ailuroedus smithi (No. 720).—Bunya Mountains, Q'land, Oct., 1919 (a few large spherical Leucocytozoa).

13. Haematozoa not Detected.

- Geopelia humeralis* (No. 26).—Stradbroke Island, Q'land, Sept., 1919.
Eudyptula minor (No. 62).—Encounter Bay, Feb., 1921.
Hieracidea occidentalis (No. 260).—Narrabri, Jan., 1918.

- Calyptorhynchus leachi* (No. 289).—Narrabri, Nov., 1916 (2); Dorrigo, Jan., 1918.
- Cacatua gymnopis* (No. 293).—Beltana, Aug., 1921.
- Platycercus pennanti* (No. 304).—Mount Wilson, June, 1915; Bunya Mountains, Q'land, Oct., 1919.
- Platycercus eximius* (No. 311).—Dubbo, July, 1915.
- Eurystomus pacificus* (No. 341).—Scone, Oct., 1917.
- Cacomantis flabelliformis* (No. 362).—Milson Island, Hawkesbury River, Jan., 1915 (young bird); Stradbroke Island, Q'land, Sept., 1919.
- Petrochelidon nigricans* (No. 386).—Stradbroke Island, Q'land, Sept., 1919.
- Orthonyx spinicaudus* (No. 464).—Dorrigo, Jan., 1918.
- Oreocincla lunulata* (No. 488).—Bunya Moutains, Q'land, Oct., 1919.
- Chthonicola sagittata* (No. 501).—Baan Baa, Jan., 1917.
- Acanthiza uropygialis* (No. 509).—Baan Baa, Jan., 1917; Dubbo, July, 1915.
- Acanthiza lineata* (No. 511).—Bunya Mountains, Q'land, Oct., 1919.
- Acanthiza pusilla* (No. 512).—Bunya Mountains, Q'land, Oct., 1919.
- Sericornis frontalis* (No. 519).—Canobolas, Oct., 1916 (2 birds); Mount Irvine, June, 1915.
- Malurus cyanochlamys* (No. 530A).—Bunya Mountains, Q'land, Oct., 1919.
- Malurus melanocephalus* (No. 542).—Mummulgum, near Casino, Dec., 1916.
- Artamus leucogaster* (No. 559).—Stradbroke Island, Q'land, Sept., 1919.
- Colluricincla rufigaster* (No. 573).—Stradbroke Island, Q'land, Sept., 1919.
- Climacteris leucophaea* (No. 593).—Bunya Mountains, Q'land, Oct., 1919.
- Zosterops dorsalis* (No. 599).—Bunya Mountains, Q'land, Oct., 1919.
- Stigmatops ocularis* (No. 639).—Stradbroke Island, Q'land. Sept., 1919.
- Anthochaera carunculata* (No. 675).—Scone, April, 1917.
- Sericulus chryscephalus* (No. 726).—Mummulgum, Dec., 1916.
- Corvus coronoides* (No. 732).—Bumbery, Jan., 1916.
- Corvus cecilae* (No. 733).—Stradbroke Island, Q'land, Sept., 1919.
- Strepera graculina* (No. 735).—Scone, April, 1917 (2 birds).
- Passer domesticus* (Sparrow).—Sydney, June, 1917.
-